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October 2003

Final Supplemental
Environmental Impact Statement
Clarification of Language in the 1994 Record of Decision
for the Northwest Forest Plan
National Forests and
Bureau of Land Management Districts Within the Range of the
Northern Spotted Owl
Proposal To Amend Wording About The Aquatic Conservation Strategy



Western Oregon, Western Washington, and Northwestern California

NOTICE

Readers should note that the Secretary of Agriculture and the Secretary of the Interior are the responsible officials for this proposed action. Therefore, no administrative review ("appeal") through the Forest Service will be available on the Record of Decision under 36 CFR 217, and no administrative review ("protest") through the Bureau of Land Management will be available on the Record of Decision under 43 CFR 1610.5-2. Because there is no administrative review of the decision, the Record of Decision will not be signed until 30 days after the Notice of Availability for the Final SEIS appears in the Federal Register (see 40 CFR 1506.10(b)).

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Final Supplemental Environmental Impact Statement
For Clarification of Language in the 1994 Record of Decision for the
Northwest Forest Plan; National Forests and Bureau of Land Management
Districts Within the Range of the Northern Spotted Owl
Proposal to Amend Wording About The Aquatic Conservation Strategy

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Abstract

The Secretaries of Agriculture and the Interior propose limited changes to language about how to demonstrate that projects follow the Aquatic Conservation Strategy, part of the Northwest Forest Plan. Projects needed to achieve Northwest Forest Plan goals have been delayed or stopped due to misapplication of certain passages in the Aquatic Conservation Strategy. The agencies are responding to the underlying need for increased agency success planning and implementing projects, to the extent that the current wording has hindered the agencies ability to follow Northwest Forest Plan principles and achieve its goals. The goals of the Northwest Forest Plan cannot be achieved without project implementation.

Three alternatives are considered in the Final Supplemental Environmental Impact Statement, No Action, the Proposed Action, and Alternative A. No Action would not change existing language within the Aquatic Conservation Strategy. The Proposed Action and Alternative A would make limited changes to clarify documentation requirements. Alternative A is the Preferred Alternative. If the Preferred Amendment is approved, implementation of the range of projects envisioned under the Northwest Forest Plan would be more likely. Land managers would more successfully demonstrate that projects follow the ACS.

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SUMMARY

Introduction/Purpose and Need

The Secretaries of Agriculture and the Interior propose limited changes to language about how to implement the Aquatic Conservation Strategy (ACS). The ACS is an integral part of the Northwest Forest Plan. The ACS is intended to maintain and restore the ecological health of watersheds and aquatic ecosystems within the Northwest Forest Plan area. The ACS includes language that has been interpreted to mean that decision-makers must demonstrate that a proposed project will attain all of the ACS objectives. These objectives were never intended to be site-specific standards; rather, they were intended to be achieved at the fifth-field watershed scale and broader, over the long term. Confusion related to the existing language has hindered federal land managers' ability to plan and implement projects needed to achieve Northwest Forest Plan goals.

The Proposed Amendment

The proposed amendment would make limited changes to language within Attachment A of the 1994 Record of Decision (ROD) for the Northwest Forest Plan. These changes would amend Forest Service and Bureau of Land Management plans throughout the Northwest Forest Plan area. The limited changes would clarify that the proper scale for federal land managers to evaluate progress toward achievement of the ACS objectives is the fifth-field watershed and broader scales. The changes would also clarify documentation requirements for land managers to demonstrate that projects follow the ACS. It would remove the expectation that all projects must achieve all ACS objectives, but would reinforce the role of watershed analysis in providing context for project planning. Current land allocations, standards and guidelines, and Northwest Forest Plan goals and objectives would be retained.

Alternatives Considered

Three alternatives - No Action, the Proposed Action, and Alternative A - are considered in detail in this Final Supplemental Environmental Impact Statement. The Forest Service and Bureau of Land Management received many comments expressing concern that the Proposed Action would change the original intent of the ACS. Alternative A was developed to mitigate these concerns.

The Consequences of No Action

If the proposed amendment is not approved, implementation of the range of projects envisioned under the Northwest Forest Plan is less likely. Projects intended to achieve Northwest Forest Plan goals would continue to be delayed or stopped due to misapplication of certain passages in the ACS. Land managers would continue to have difficulty demonstrating that projects follow the ACS.

The Consequences of the Action Alternatives

If the proposed amendment is approved, implementation of the range of projects envisioned under the Northwest Forest Plan would be more likely. Land managers would more successfully demonstrate that projects that comply with standards and guidelines follow the ACS.

Monitoring

The agencies have developed a monitoring plan to assess progress toward attainment of ACS objectives across the Northwest Forest Plan area. The Aquatic Riparian Effectiveness Monitoring Plan (AREMP) was approved in March 2001 and published in 2003 (Reeves et al. 2003). Under the AREMP, the condition of various watersheds across the Northwest Forest Plan area will be evaluated. Over time, AREMP will show whether watershed conditions are improving. The AREMP will provide information in a decade or more at the province scale. Monitoring also occurs as a part of each Resource Management Plan.

Decision Factors

The decision will be based on which alternative increases success planning and implementing projects that follow Northwest Forest Plan principles and achieve its goals, and has the least risk of changing the original intent of the ACS.

CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

Introduction

The Secretaries of Agriculture and the Interior propose limited changes to language in National Forest Land and Resource Management Plans and Bureau of Land Management Resource Management Plans within the Northwest Forest Plan area (see Figure 1) to clarify the Aquatic Conservation Strategy described within these plans.

In 1994, the Secretaries of Agriculture and the Interior signed the Northwest Forest Plan, which amended agency management plans as part of the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*. The 1994 Record of Decision resulted in several amended resources management plans, however agencies continue to refer to the coordinated management direction as the Northwest Forest Plan.

The Aquatic Conservation Strategy (ACS) is an integral part of the Northwest Forest Plan. The ACS was developed to maintain and restore the ecological health of watersheds and aquatic ecosystems within public lands. The ACS includes language that has been interpreted to establish an expectation that may be impossible for projects to meet. These interpretations hinder federal land managers' ability to plan and implement projects needed to achieve Northwest Forest Plan goals. The Secretaries of Agriculture and the Interior propose to amend the Northwest Forest Plan to clarify the documentation required to demonstrate that projects follow the ACS.

This Supplemental Environmental Impact Statement (SEIS) supplements information in the Northwest Forest Plan Record of Decision and FSEIS. The 1993 Forest Ecosystem Management Analysis Team (FEMAT) report provides the scientific basis for the Northwest Forest Plan and Aquatic Conservation Strategy.

The Forest Service (FS) and Bureau of Land Management (BLM) prepared this Final SEIS in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. The FS and BLM are also referred to as "the agencies." An Interagency Interdisciplinary Team (IDT) was chartered to evaluate the potential effects of the proposed amendment (see List of Preparers).

The area affected by the proposed amendment is referred to as the Northwest Forest Plan area. In this SEIS, Land and Resource Management Plans for National Forests and Resource Management Plans for BLM Districts are collectively referred to as "Resource Management Plans or RMPs." Resource Management Plans for the following administrative units would be amended:

- Salem, Eugene, Roseburg, Medford, and Coos Bay BLM Districts in Oregon
- Klamath Falls Resource Area of the Lakeview BLM District, also in Oregon
- Arcata, Redding, and Ukiah BLM Field Offices in California
- The King Range National Conservation Area Management Plan in the Arcata BLM Field Office, also in California
- Gifford Pinchot, Olympic, Mt. Baker-Snoqualmie, Okanogan, and Wenatchee National Forests in Washington¹
- Mount Hood, Willamette, Umpqua, Siuslaw, Siskiyou, Rogue River, Deschutes, and Winema National Forests in Oregon
- The Six Rivers, Klamath, Lassen, Mendocino, Modoc, and Shasta-Trinity National Forests in California

The proposed amendment would also affect management of the Coquille Forest. These lands are owned by the Coquille Indian Tribe, are part of the Coquille Indian Reservation, and are held in trust by the United States. An Act of Congress in 1996 transferred ownership of about 5,400 acres of federal land within the Northwest Forest Plan transferred to the Coquille Indian Tribe. The Act required that Coquille Forest be managed subject to the standards and guidelines of federal forest plans on adjacent or nearby federal lands, therefore the Coquille Forest would be affected by this proposed amendment to the Coos Bay BLM Resource Management Plan.

Throughout this document, the 1994 Northwest Forest Plan Final Supplemental Impact Statement is referred to as the Northwest Forest Plan FSEIS, while the 2003 ACS Final Supplemental Impact Statement is referred to as the Final SEIS.

¹ The proposed amendment to National Forest Land and Resource Management Plans are considered significant amendments under the National Forest Management Act.



Figure 1. Northwest Forest Plan Area Map

Purpose and Need

Need

The Northwest Forest Plan includes the following principles (p. 3 of the 1994 Record of Decision):

- "...to protect the long-term health of our forests, our wildlife and our waterways ..."
- "Where sound management policies can preserve the health of forest land, timber sales should go forward."
- "...to produce a predictable and sustainable level of timber sales...that will not degrade or destroy the environment."

The goal of the ACS is stated in several places, including page B-9 of the Northwest Forest Plan Record of Decision:

- "to maintain and restore the ecological health of watersheds and the aquatic ecosystems within them."

Projects intended to achieve Northwest Forest Plan goals have been delayed or stopped due to misapplication of certain passages in the ACS. Specific language has been interpreted to mean that every project must achieve all ACS objectives at all spatial and temporal scales. This interpretation suggests land managers must demonstrate that a project will maintain existing conditions (or lead to improved conditions) at every spatial and temporal scale. Any project that may result in site-level disturbance to aquatic or riparian habitat, no matter how localized or short-term, could be precluded under this interpretation. This interpretation establishes an impossible expectation for demonstrating that a project follows the ACS.

Current language has also been interpreted to imply too simplistic a relationship between projects and attainment of ACS objectives by requiring a "finding of consistency" with ACS objectives for all projects. Projects must be considered in a watershed-scale or broader context to determine whether potential effects to aquatic ecosystems are acceptable.

The agencies are responding to the underlying need for increased success planning and implementing projects, to the extent that the current wording has hindered the agencies ability to follow Northwest Forest Plan principles and achieve its goals. The goals of the Northwest Forest Plan cannot be achieved without project implementation.

Types of projects most likely affected by misinterpretation of the ACS include:

- Forest management outside reserves, including regeneration timber harvest and harvest within late-successional and old-growth habitats.
- Actions associated with timber harvest, including transportation system treatments such as culvert removal and replacement.
- Restoration silviculture in Riparian and Late-Successional Reserves, hazardous fuels reduction and forest health thinning, especially projects that are accomplished by a timber sale.
- Special uses, mining, livestock grazing and recreation.
- Watershed restoration projects, such as stream enhancements, fish passage improvements, and road decommissioning.²

Overlap between these types of projects is common. Timber sales are used to accomplish hazardous fuels reduction, restoration silviculture, and forest health thinning. Frequently, timber sales provide the opportunity and funding for culvert removal and replacement.

The current wording of the ACS has influenced litigation regarding the Endangered Species Act. The U.S. District Court in the Western District of Washington interpreted the Northwest Forest Plan as requiring that, “not only must the ACS objectives be met at the watershed scale...each project must also be consistent with ACS objectives, i.e. it must maintain the existing condition or move it within the range of natural variability.” Pacific Coast Federation of Fishermen’s Association v. National Marine Fisheries Service, 71 F. Supp.2d 1063, 1069 (W.D. Wash. 1999).³

In the PCFFA v. NMFS litigation, the U.S. District Court ruled that the Northwest Forest Plan programmatic biological opinion met the standards of the Endangered Species Act but that 24 project-level biological opinions did not adequately demonstrate that projects followed the ACS. The U.S. District Court ruled that NMFS had an independent obligation to ensure ACS consistency since it was used as a surrogate for jeopardy analysis⁴.

² Other examples of restoration projects include (but are not limited to) prescribed burning, underplanting, snag and down wood management, invasive weed control.

³ This case will hereby be referred to as PCFFA v. NMFS. This part of the ruling was affirmed in 253 F. 3d 1137 (9th Circuit 2001). See Appendix A for full text of the ruling. NMFS is now known as National Oceanic and Atmospheric Administration (NOAA) Fisheries.

⁴ Jeopardy analysis refers to a determination that programs or projects will not jeopardize the continued existence of a species listed as threatened or endangered, or proposed for listing under the Endangered Species Act. Jeopardy analysis was at issue in PCFFA v. NMFS.

The U.S. District Court said that National Marine Fisheries Service (NMFS):

- failed to demonstrate that projects included in biological opinions were consistent with ACS objectives at all scales;
- inadequately addressed site-specific and aggregated effects of timber sales;
- inadequately addressed short-term adverse effects from timber sales;
- ignored the best available scientific information due to a failure to demonstrate the use of watershed analysis and its recommendations; and
- failed to show that actions proposed within Riparian Reserves would result in benefits to aquatic habitats and ecosystems as required by the Northwest Forest Plan.

The U.S. District Court in PCFFA v. NMFS allowed some watershed restoration projects to proceed, even though they were covered by a biological opinion invalidated by the court. Timber sales under the same biological opinions were not allowed to proceed, even though in many cases, the action that caused the adverse effect were restoration components attached to timber sale activities (such as a culvert replacement on a timber sale haul route). This has led to further agency confusion about application of the ACS at the site scale.

Northwest Forest Plan goals that would have been addressed by the timber Sales include: maintaining forest health, producing a sustainable supply of wood products, and restoring watershed health. The timber sales covered by the invalidated biological opinions minimized construction of roads and included associated projects such as decommissioning roads, and upgrading culverts. Trees were to be directionally felled away from the Riparian Reserves. Ground-based yarding and prescribed burning were to be timed to avoid harmful impacts.

As a result of the design features and mitigation measures, the timber sales were characterized as having minimal impact on anadromous fish habitat. The most common impact noted was a transitory increase in stream sedimentation and/or short-term, localized sedimentation from road-related activities, especially activities that would have been restorative in the long term but directly affected streams and riparian areas in the short-term, such as culvert replacement, road decommissioning, skid trail obliteration and road maintenance. The current wording of the ACS has been interpreted to preclude timber sales such as these that may result in minimal impact to aquatic and riparian habitat.

NOAA Fisheries has not issued any biological opinions covering timber sales in the Northwest Forest Plan area since 1999. Transportation system projects associated with the timber Sales have also been delayed.

The court decisions were related to biological opinions covering specific timber sales, but the underlying assumptions in the decisions could apply to any project. At least three pending lawsuits have been filed that allege that proposed projects do not follow the ACS because they do not maintain the existing riparian and aquatic condition at every scale; and thus violate requirements that projects comply with Resource Management Plans under the Federal Land and Policy Management Act (FLPMA) and the National Forest Management Act (NFMA).⁵

A difficulty presented by the court interpretations in the PCFFA litigation is that projects are expected to attain ACS objectives at all scales. However, the ACS objectives contain broad goals that are not intended to be achieved by individual projects. For example, the land allocations within the Northwest Forest Plan could be expected to meet the ACS objective to “maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of aquatic systems.” However, this same objective is impossible to achieve if applied as a standard to an individual project.

Purpose

The purpose of the proposed amendment is to clarify that:

- The proper scales for federal land managers to evaluate progress toward achievement of the ACS objectives are the fifth-field watershed and broader scales.⁶
- No single project should be expected to achieve all ACS objectives.

⁵ BARK, et al. v. Gary Larsen et al. U.S D.C. District Court of Oregon, Civil No. 02-904-HU, filed July 2002; Headwaters and ONRC Fund v. United States Forest Service; U.S D.C. District Court of Oregon, Civil No. 02-1519-JO, filed November 2002; and Klamath-Siskiyou Wildlands Center v. BLM U.S.D.C. District Court of Oregon, Civil No. 03-3006-CO, filed January 2003. League of Wilderness Defenders and Blue Mountains Biodiversity Project, and Cascadia Wildlands Project v. U.S. Forest Service, Civil No. 03-1357-PA (filed October 3, 2003)

⁶ The fifth-field scale was selected in the 1995 Federal Guide for Watershed Analysis as the consistent size for analysis. It is the first subdivision of a subbasin and considered the most appropriate to “provide the context for management through description and understanding of specific ecosystem conditions and capabilities” (p. 7) and “satisf[y] many needs and offers a consistent format for reporting results of an analysis” (p. 8).

- Decision-makers must design projects to follow the ACS. Project records must contain evidence that the project complies with relevant standards and guidelines in Sections C and D of Attachment A in the Northwest Forest Plan Record of Decision. Project records must also demonstrate how the decision-maker used relevant information from applicable watershed analysis to provide context for project planning.
- References to ACS objectives in the standards and guidelines in Sections C and D do not require that decision makers find that site-scale projects, in themselves, will fully attain ACS objectives.

Goals and objectives, management prescriptions and practices, land allocations and other management direction are contained within Attachment A. However, allocation-specific management direction that applies to project planning is also called "standards and guidelines." These standards and guidelines are contained in Sections C and D of Attachment A. An amendment is needed to clarify that the standards and guidelines that must be specifically addressed in project planning records are those within Sections C and D of Attachment A, rather than the entirety of Attachment A.

Scope of The Decision

The Secretaries of Agriculture and the Interior are the decision-makers for this SEIS. They will decide whether or not to amend the ACS portions of all Resource Management Plans within the Northwest Forest Plan area. Management of the Coquille Forest would also be affected. The Secretaries are not reconsidering decisions made in 1994 regarding land allocations or fundamental management direction.

Individual projects would not be approved with this programmatic decision. The Secretaries will select No Action, the Proposed Action, or the Proposed Action as modified in Alternative A. The secretaries may also select a combination of these alternatives. A Supplemental EIS was prepared to address potential effects of the language changes because the agencies perceive that any change to the Northwest Forest Plan is controversial.

The decision will be based on which alternative increases success planning and implementing projects that follow Northwest Forest Plan principles and achieve its goals and has the least risk of changing the original intent of the ACS.

During scoping and the Draft SEIS comment period, many people suggested that the agencies should analyze certain concurrent proposals in a single EIS. Several commenters specifically mentioned that the Survey and Manage Supplemental EIS should be combined with the ACS Supplemental EIS.

The agencies are also concurrently considering alternatives to remove or modify the Survey and Manage mitigation measure in the Northwest Forest Plan to settle litigation filed by the timber industry and county government associations.

Other alleged connected analyses were also named, including the Forest Service "Invasive Plant EIS," the BLM and FS "Port-Orford-cedar EIS" and the BLM "Vegetation Treatments Programmatic EIS." The Port-Orford-cedar EIS was necessitated by the Kern v. BLM decision of the Ninth Circuit, and the BLM Vegetation Management EIS is intended (among other things) to address problems created by court injunctions from the 1980's that still restrict BLM herbicide use.

The agencies also considered the recent settlement agreement on a lawsuit pertaining to the federal timber sale program on Oregon and California (O&C) railroad lands. The major issues revolved around the alleged inappropriate application of reserves and wildlife viability standards to O&C lands. The O&C lands account for more than 2.5 million acres in western Oregon and northern California.

Under the O&C settlement agreement, federal agencies will attempt to achieve the PSQ associated with Alternative 9 (approximately 805 million board feet - see Chapter Three for more information on PSQ), along with additional harvest from restoration silviculture within the reserves. The BLM will revise its Resource Management Plans within the next several years. The revision process outlined in the settlement agreement will require further NEPA analysis. In the meantime, the BLM will continue to manage lands under its administration in accordance with existing Resource Management Plans.

NEPA regulations at 40 CFR 1508.25 (9)(a) discuss situations that warrant considering actions in a single environmental impact statement. None of the concurrent analyses, regulatory proposals, and settlements trigger action on the ACS SEIS, nor would a decision on the ACS trigger action on any of the other proposals. Each could proceed independently of the other. None are interdependent parts of a larger action.

The effects of the Northwest Forest Plan as a whole are analyzed in the 1994 FSEIS. None of the current proposals alter Northwest Forest Plan land allocations that are the basis for the effects analysis.

Therefore, the agencies determined that these various proposals are not connected or similar actions and therefore need not be combined in a single SEIS (40 CFR 1508.25). The cumulative effects of these actions are considered in Chapter 3&4.

Background: The Aquatic Conservation Strategy

The ACS was developed to restore and maintain ecological health of watersheds (and the aquatic ecosystems contained within them) on federally-managed lands within the Northwest Forest Plan area. The four major components of the ACS (Riparian Reserves, Key Watersheds, watershed analysis, and watershed restoration) provide the basis for protection of watershed health.

As stated in the Northwest Forest Plan Record of Decision:

“The Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales...This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds.”

One of the authors of the ACS from the FEMAT team described the intent of the ACS as follows:⁷

“The ACS objectives provide a framework for managing aquatic ecosystems at the watershed and landscape (i.e. multiple watershed) scale. They describe the attributes and distribution of aquatic ecosystems believed necessary to provide conditions for maintaining currently strong populations of fish and other aquatic and riparian-dependent organisms and to recover currently degraded ecosystems. They are not intended to be a hard set of criteria that could or can be applied equally at all spatial scales of concern (i.e. site, watershed, province and region).”

In November 1999, the Regional Ecosystem Office (REO) published a memorandum addressing “Northwest Forest Plan Record of Decision requirements for determining project consistency with ACS objectives.” The REO clarified that “the watershed scale is the appropriate landscape context for determining whether actions are consistent with the ACS objectives.” The full text of the REO memorandum is included in Appendix A.

⁷ Declaration of Gordon Reeves Ph.D. filed in 1999 in PCFFA v. NMFS Civ. No. C 99-0067 T (U.S.D.C. W.D. Washington). Full text of the declaration is included in Appendix A.

In December 2002, the United States Department of the Interior Office of Hearings and Appeals, Interior Board of Land Appeals (IBLA) upheld the BLM's interpretation of the ACS. The IBLA decision states:

"The Northwest Forest Plan does not require every action conducted in a watershed to result in improvement to the watershed," and that "it may take decades, possibly more than a century" to achieve ACS objectives.

The IBLA concludes that timber sales that would not degrade a watershed are not precluded (even though they may have short-term, site-scale effects).

The Northwest Forest Plan includes existing language that supports the proposed language change (see Table 1). Gordon Reeves, PhD is a scientist who worked on the original Aquatic Conservation Strategy and has continued to work on ways to implement the strategy and monitor its results. In a 2003 review of the science behind the ACS, Dr. Reeves wrote:

"The Aquatic Conservation Strategy was designed to restore and maintain the processes that create and maintain conditions in aquatic ecosystems over time."

Reeves also wrote that successful implementation of the ACS would require:

"...policies that recognize the dynamic nature of aquatic ecosystems and describe practices that allow the systems to express a range of desired conditions over time."

Dr. Reeves noted that watersheds that support aquatic ecosystems display a range of conditions and not every reach of stream need be in good condition for the watershed to function properly. The full text of Dr. Reeves' report is in Appendix F.

Table 1. Northwest Forest Plan Excerpts

Citation	Excerpt	Interpretation
FEMAT page V-30; FSEIS page B-82.	“...To succeed, any Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales. Thus, this is the approach the conservation strategy here employs. The approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds...”	This excerpt indicates that the Aquatic Conservation Strategy has broad scale objectives. Individual projects must be considered in the context of the larger landscape.
FSEIS page 3&4-320	“...Projects can only proceed if watershed analysis and site-specific analysis and consultation find management activities consistent with...management direction. The consistency of these actions with specific prescriptions and long-term objectives of this proposal will either be affirmed by monitoring and research, or will be adapted to conform with the long-term objectives.”	This excerpt indicates that the Aquatic Conservation Strategy has long-term objectives.
FSEIS page B-83	“Implementing the ACS requires applying the standards and guidelines ...within the context of the overall ACS objectives.”	This excerpt differentiates between objectives and standards and guidelines. While all of Attachment A includes management direction, a subset of that direction is “standards and guidelines” that apply to project planning within various land allocations.

*Final Supplemental Environmental Impact Statement
Proposal to Amend Wording About the Aquatic Conservation Strategy*

Citation	Excerpt	Interpretation
FSEIS page B-83	“The standards and guidelines are designed to focus the review of proposed and existing projects to determine their compatibility with the ACS.”	This excerpt indicates that compliance with Key Watershed and Riparian Reserve standards and guidelines, given context provided by information at the watershed scale, ensures that projects are compatible with the ACS.
FSEIS page F-64	“The total system of Key Watersheds, along with Riparian Reserves and the specified standards and guidelines, will meet the need to protect the overall ecosystem while providing for other management opportunities.”	This excerpt indicates that compliance with Key Watershed and Riparian Reserve standards and guidelines, given context provided by information at the watershed scale, ensures that projects are compatible with the ACS.
Record of Decision page B-12; FSEIS page 3&4-68	“Standards and guidelines are intended to prohibit and/or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives.”	This excerpt indicates that compliance with Riparian Reserve standards and guidelines will ensure that attainment of ACS objectives is not retarded or prevented.
FSEIS Volume II, Appendix F. page F-166	“The Aquatic Conservation Strategy objectives do not meet the definition of standards and guidelines and thus, are not included.”	This excerpt differentiates between standards and guidelines and objectives.

Public Involvement

Scoping comments were solicited from the public, government agencies, and agency staffs through the following:

- Notice of Intent published in the Federal Register on November 25, 2002.
- Scoping letters sent to 2,800 concerned parties, including Indian tribes, through the Northwest Forest Plan mailing list between December 17, 2002 and January 14, 2003.
- On January 15, 2003, the scoping period was extended to February 3, 2003 to assure that all interested parties were provided adequate time to comment.

More than 400 letters, faxes, and e-mails (collectively referred to as scoping comments) were received from a wide variety of parties including environmental organizations, industry associations, local governments, individuals, and two Inter-tribal fish commissions. Scoping comments covered a wide array of interests. All scoping comments were reviewed by the IDT.

A Draft SEIS was released in March 2003. A comment period that exceeded 90 days was provided. The comment period ended July 10, 2003. Approximately 1,200 pieces of correspondence were received. A summary of substantive comments and agency responses is in Appendix C. The summary reflects the range of comments received. The public and other agencies raised the following issues during the scoping and Draft SEIS comment periods:

- **Changed Conditions** - Changed conditions since the release of the 1994 FSEIS should be considered in the effects analysis. Since 1994, there have been droughts, floods, and wildfires and subsequent salvage and restoration activities. Within the Northwest Forest Plan area since 1994, several species of fish have been listed under the Endangered Species Act and several water bodies have been listed as impaired under the Clean Water Act. Since 1994, agencies have been unable to meet the Probable Sale Quantity associated with Alternative 9.
- **Increased Accomplishment** - The proposed amendment is intended to increase agency success planning and accomplishment that follow Northwest Forest Plan principles, including timber harvesting. Timber harvesting and associated road work may have effects that are not consistent with attainment of ACS objectives.
- **Potential Unintended Consequences** - The proposed amendment may change the original intent of the ACS by eliminating particular passages. The analysis within this SEIS is related to these issues. Alternative A was developed to mitigate the risk of unintended consequences.

CHAPTER 2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

Introduction

This chapter describes and compares the alternatives considered in detail. It also discloses additional alternatives considered but eliminated from detailed study, and provides rationale for their dismissal.

Assumptions Common to All Alternatives

- All alternatives retain land allocation decisions from the Northwest Forest Plan.
- All components of the Aquatic Conservation Strategy are maintained, including Riparian Reserve standards and guidelines, watershed analysis, watershed restoration, and Key Watersheds. ACS objectives remain unchanged.
- NOAA Fisheries and the U.S. Fish and Wildlife Service (USFWS) are developing new approaches to consultation that do not rely on the ACS as a surrogate for Endangered Species Act jeopardy analysis. The new approaches would be applied to consultation under all alternatives.

Alternatives Considered in Detail

Three alternatives - No Action, the Proposed Action, and Alternative A - are considered in detail in this Final Supplemental Environmental Impact Statement. These alternatives are variations on language within Attachment A of the Northwest Forest Plan Record of Decision.

No Action

Under the No Action alternative, the current wording of the ACS would be retained. Land managers would continue to plan projects to meet the goals and objectives of the Northwest Forest Plan, but would encounter difficulty demonstrating that projects resulting in short-term disturbance to aquatic or riparian habitat “maintain the existing condition.” A “finding of consistency with ACS objectives” would continue to be required for every project.

Proposed Action

Under the Proposed Action, the Secretaries of Agriculture and the Interior would amend specific language about how to follow the ACS within Resource Management Plans in the Northwest Forest Plan area. Land managers would be required to demonstrate that projects comply with applicable standards and guidelines in Sections C and D of Attachment A in the Record of Decision. Land managers would also be required to document how applicable watershed analysis was used to provide context for project planning. No additional site-scale determinations regarding attainment of ACS objectives would be required.

The Proposed Action does not change the goals or objectives of the 1994 Northwest Forest Plan Record of Decision. All components of the ACS (Riparian Reserves, Key Watersheds, watershed analysis and watershed restoration) would remain in place.

The Proposed Action also clarifies that information in watershed analysis will be used in planning and decision-making, but is not a decision-making process in and of itself. This principle is emphasized in 1994 Northwest Forest Plan Record of Decision, 1994 the FSEIS, and the 1995 *Federal Guide for Watershed Analysis*.

Alternative A – The Preferred Alternative

The Proposed Action was modified in response to comments received during the Draft SEIS comment period. The modified Proposed Action is called Alternative A. Alternative A is the Preferred Alternative.

Alternative A retains some paragraphs deleted by the Proposed Action and adds some explanatory paragraphs to the Proposed Action. These modifications are intended to resolve public concerns about specific wording in the Proposed Action, to more precisely reflect the intent of the ACS.

Public concern was expressed that under the Proposed Action a given project would not be required to “maintain the existing condition or improve the watershed condition.” Alternative A retains the concept that under the ACS, agencies must “maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale, over the long term.”

Many people expressed concern about removing paragraphs that state that all of Attachment A should be considered “standards and guidelines.” Some people stated that the Proposed Action “rendered many Section C and D standards and guidelines unclear and ineffective.” Alternative A was developed to retain existing paragraphs that refer to all of Attachment A was standards and guidelines, to avoid unintended consequences of removing or replacing these references. Alternative A also retains the existing language that explains how to interpret standards and guidelines that refer to ACS objectives.

Specific language choices associated with No Action, Proposed Action, and Alternative A are compared in the following pages.

Northwest Forest Plan, Attachment A, Page A-6		
No Action (Existing)	Proposed Action	Alternative A
Designated areas, matrix and Key Watersheds all have specific management direction regarding how these lands are to be managed, including actions that are prohibited and descriptions of the conditions that should occur there. This management direction is known as “standards and guidelines” – the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained. Although the direction in all sections of this document constitutes standards and guidelines, standards and guidelines specific to particular land allocation categories, or relative to specific types of management activities, are included in Section C of these standards and guidelines.	Deleted in entirety	Same as No Action

Northwest Forest Plan, Attachment A, Page B-9		
No Action (Existing)	Proposed Action	Alternative A
Any species-specific strategy aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. The Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds. Because it is based on natural disturbance processes, it may take decades, possibly more than a century, to accomplish all of its objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years.	Any species-specific strategy aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. The Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds. Because it is based on natural disturbance processes, it may take decades, possibly more than a century, to accomplish all of its objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years. The baseline from which to assess maintaining or restoring the condition is developed through a watershed analysis. Improvement means restoring biological and physical processes within their ranges of natural variability.	Same as No Action

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Northwest Forest Plan, Attachment A, Page B-10		
No Action (Existing)	Proposed Action	Alternative A (see footnotes on following page)
<p>The standards and guidelines are designed to focus the review of proposed and certain existing projects to determine compatibility with the Aquatic Conservation Strategy objectives. The standards and guidelines focus on “meeting” and “not preventing attainment” of Aquatic Conservation Strategy objectives. The intent is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives. The decision maker will use the results of watershed analysis to support the finding. In order to make the finding that a project or management action “meets” or “does not prevent attainment of” the Aquatic Conservation Strategy objectives, the analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed, and how the proposed project or management action maintains the existing condition or moves it within the range of natural variability. Management actions that do not maintain the existing condition or lead to improved conditions in the long term would not “meet” the intent of the Aquatic Conservation Strategy and thus, should not be implemented.</p>	<p>The four components of the Aquatic Conservation Strategy (Riparian Reserves, Key Watersheds, watershed analysis, and watershed restoration), in combination with application of pertinent standards and guidelines, are expected to maintain and restore ecosystem health at watershed and broader scales.</p> <p>By itself, no site-scale project can, or should be expected to fully achieve ACS objectives. These objectives are intended to be met over time at watershed and broader scales. Monitoring results will help managers evaluate progress toward achievement of ACS objectives.</p> <p>To follow the ACS at the site-scale, decision makers must demonstrate that projects comply with standards and guidelines in Sections C and D.</p> <p>The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for the design and site-specific assessment of the project, recognizing that watershed analysis is not a decision-making process in and of itself.</p> <p>References to ACS objectives in the standards and guidelines in Sections C and D do not require that decision makers find that site-scale projects, in themselves, will fully attain ACS objectives.</p>	<p>The four components of the Aquatic Conservation Strategy (Riparian Reserves, Key Watersheds, watershed analysis, and watershed restoration), in combination with application of relevant standards and guidelines in Sections C and D (and other relevant standards in Resource Management Plans) are intended to achieve Aquatic Conservation Strategy Objectives.¹</p> <p>Under the Aquatic Conservation Strategy, the agencies must maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale over the long term. No management activities can be expected to maintain the existing condition at all scales and all times; disturbance from management activities must be considered in the context of the condition of the fifth-field watershed as a whole.²</p> <p>The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for project planning, recognizing that watershed analysis is not a decision-making process in and of itself, nor is watershed analysis a decision document. If watershed analysis is not required or available, or does not contain relevant information, the project record will provide evidence that project effects were considered relative to the watershed condition. Projects should be designed to comply with applicable standards and guidelines in Sections C and D (and other applicable standards in Resource Management Plans). No further finding of ACS consistency is required.</p> <p>To comply with Riparian Reserve Standards and Guidelines that reference ACS objectives, the decision maker must document that analysis has been completed, including a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability.³</p>

Footnotes from Alternative A, page B-10:

¹ Federal agencies may not be able to attain objectives within watersheds with relatively low proportions of Federal lands (see Northwest Forest Plan FSEIS p. 3&4-82).

² The Federal Guide for Watershed Analysis (1995) discusses issues of scale and explains why the fifth- field watershed scale “satisfies many needs and offers a consistent format for reporting results of an analysis.” The Federal Guide states that analysis at the watershed scale “provides the context for management through the description and understanding of specific ecosystem conditions and capabilities.” Watershed analysis requirements are described later in Section B.

³ The Federal Guide for Watershed Analysis (1995) discusses Range of Natural Variability on p. 20.

Northwest Forest Plan, Attachment A, Page C-1		
No Action (Existing)	Proposed Action	Alternative A
<p>Although the direction in all sections of this document constitutes standards and guidelines, standards and guidelines specific to particular land allocation categories, or relative to specific types of management activities, are included (or referenced) in this section, Section C, of these standards and guidelines.</p> <p>All land allocations have specific management direction regarding how those lands are to be managed, including actions that are prohibited and descriptions of the conditions that should occur there. This management direction for specific lands is known as “standards and guidelines” — the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained.</p>	<p>Paragraph deleted</p> <p>All land allocations have specific management direction regarding how those lands are to be managed, including actions that are prohibited and descriptions of the conditions that should occur there. This management direction for specific lands is known as “standards and guidelines” — the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained.</p>	<p>Same as No Action</p>

Northwest Forest Plan, Attachment A, Page C-2		
No Action (Existing)	Proposed Action	Alternative A
Related approved plans such as those for National Scenic Areas or Wild and Scenic rivers are similarly assumed to apply where they are more restrictive, or provide greater benefits for late-successional forest related species.	<p>Related approved plans such as those for National Scenic Areas or Wild and Scenic rivers are similarly assumed to apply where they are more restrictive, or provide greater benefits for late-successional forest related species.</p> <p>Some standards and guidelines refer to attaining, being consistent with, meeting, or achieving ACS objectives. The intent of these references is that projects will use relevant information from applicable watershed analysis to provide context for project planning. These references do not mean that decision makers must find that a site-scale project, by itself, will fully attain ACS objectives.</p>	Related approved plans such as those for National Scenic Areas or Wild and Scenic rivers are similarly assumed to apply where they are more restrictive, or provide greater benefits for late-successional forest related species.

Northwest Forest Plan, Attachment A, Page C-31		
No Action	Proposed Action	Alternative A
As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives. Watershed analysis and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds.	As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives. Watershed analysis and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds.	<p>As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives at the fifth-field watershed scale, over the long term. Watershed analysis and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds.</p> <p>To comply with Riparian Reserve standards and guidelines that reference ACS objectives, the decision maker must complete an analysis that includes a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability.</p>

Alternatives Considered but Eliminated from Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives to the Proposed Action and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). The range of alternatives considered in detail is limited by the requirement to fulfill the Purpose and Need.

Several alternatives considered by the interdisciplinary team were eliminated from detailed study. The Purpose and Need substantially limits the range of reasonable alternatives available for analysis and provides a relatively narrow scope for this action.

No Cutting or Removal of Trees Older Than 80 Years

The Oregon Natural Resources Council and several other groups and individuals suggested an alternative that would not allow cutting or removal of trees aged 80 years or older. With a few exceptions, all land allocations and standards and guidelines of the Northwest Forest Plan would remain in effect. Fuel reduction activities in fire-dependent forests may be allowed when the primary objective is ecological restoration. Pre-disturbance surveys would not be required for restoration projects in stands less than 80 years old. Pre-disturbance surveys would still be required for fuel reduction projects that substantially modify stands more than 80 years old. Pre-disturbance surveys would be conducted for Survey and Manage and Protection Buffer species listed in the 1994 Northwest Forest Plan Record of Decision. Strategic surveys would continue.

This alternative was eliminated from detailed study because it does not respond to the Purpose and Need for Action. It does not suggest an alternative way to clarify language in the ACS, nor does it respond to the underlying need to follow Northwest Forest Plan principles.

This SEIS is not intended, nor required, to re-examine management direction within the Northwest Forest Plan. An alternative that considered limiting harvest to stands younger than 80 years was analyzed, but not selected, in 1994.

Additional Standards and Guidelines and/or Mitigation Measures

Three specific alternatives were suggested to increase protection of aquatic ecosystems.

- 1) An alternative was suggested to suspend existing "logging plans" and not permit any future plans until the "long-term consequences can be comprehensively approached, especially within sensitive places such as old-growth, areas that have not recovered from damage caused by past logging, and anywhere slopes are steep or unstable. "
- 2) An alternative was suggested that would have eliminated regeneration harvesting from consideration within the Northwest Forest Plan area.
- 3) An alternative was suggested to strictly prohibit activities that could disturb aquatic or riparian ecosystems at any scale. Riparian Reserve standards and guidelines would apply to all projects, regardless of land allocation.

The range of alternatives in the 1994 Northwest Forest Plan FSEIS considered measures such as the three suggested here. For instance, the FSEIS considered eliminating programmed timber harvest in late-successional and old-growth stands, and eliminating road building in Key Watersheds.

The Secretaries of Agriculture and the Interior selected Alternative 9 in their 1994 decision. The current Secretaries intend to increase agency success implementing that plan. Alternatives that added standards and guidelines were eliminated from detailed study because they would not meet the Purpose and Need for Action as described in Chapter 1. They would not result in increased success implementing projects (including timber sales) that follow Northwest Forest Plan principles. These alternatives would not address the need to clarify the current wording of the ACS to remove expectations that are impossible for projects to meet.

Exempt Ski Resorts from Riparian Reserve Standards and Guidelines

The agencies also considered an alternative to exempt ski resorts from the Riparian Reserve standards and guidelines. Ski area representatives have asserted that Riparian Reserve standards and guidelines have restricted ski run development and reduced the potential for additional recreational opportunities. An array of Best Management Practices specific to the ski industry was suggested to meet the same needs as the Riparian Reserve standards and guidelines but allow greater flexibility.

During the Draft SEIS comment period, ski industry representatives stated that:

“The Crystal Mountain Master Development Plan Draft Environmental Impact Statement document (August 2000) contains many examples of how Riparian Reserves have restricted ski trail development.”

“Confusion resulting from misinterpretation of the ACS objectives has contributed to a three-year setback for the Mt. Ashland project, likely doubled the expense associated with the NEPA process, and has contributed to the complete redrafting of the Mt. Ashland Ski Area Expansion Environmental Impact Statement. “

“In the late 1980s, operators of the Stevens Pass ski facility developed ski runs in the Mill Valley portion of the Stevens Pass special use permit (SUP) area. It is worth noting that trail development accomplished in the late 1980s would not have been allowed given the current, prevailing interpretation of the ACS (in fact, much of Region 6's ski trail infrastructure would not have been possible with the prevailing ACS interpretation.)”

The ski industry representatives further described their suggestion for a “fundamental re-design” of how the Riparian Reserve standards and guidelines apply to permitted ski resorts. The representatives suggested a “matrix of modified standards and guidelines and ‘best management practices’ for special use permit lands.” The representatives asserted that a significant degree of protection for riparian areas would be achieved with such a matrix.

The alternative to exempt ski industry operations from the Aquatic Conservation Strategy standards and guidelines and replace them with another set of standards was eliminated from detailed study because it would not respond to the Purpose and Need. The scope of this SEIS is strictly limited to clarify ACS intent; this alternative would deviate from the intent to apply the standards and guidelines to activities within Riparian Reserves on federal lands within the Northwest Forest Plan area.

Streamline Procedures for Planning Restoration Activities

This alternative would streamline procedures for planning and implementing restoration activities, while leaving the existing language intact for logging, mining, and other extractive activities. Language would be drafted to allow short-term disturbance to aquatic or riparian habitat for watershed restoration projects. Short-term disturbance to aquatic or riparian habitat would not be allowed for projects that are not clearly restorative.

This alternative was eliminated from detailed study because it does not address the underlying need for action, which is to follow Northwest Forest Plan principles and achieve its goals. Alternative 9 was selected within the Northwest Forest Plan partly because it provided higher amounts of timber than some other alternatives. This alternative would put impossible expectations on logging (and other “non-restoration”) projects because “short-term disturbance would not be allowed.”

This alternative would also leave unclear how to treat watershed restoration projects associated with a timber sale (such as culvert upgrades along a timber sale haul route). Streamlined procedures already exist for routine projects that may be categorically excluded from documentation in an Environmental Assessment or EIS under NEPA.

Separate Watershed Restoration from Timber Sales

Some comment letters to the Draft SEIS suggested that watershed restoration components should not be funded or accomplished with timber sales. Restoration work is often funded or accomplished with timber sales. This is efficient and allows opportunities to meet a variety of needs with an integrated project. Timber sales can fund road work, reduce fuel hazard, and improve forest health. Separating these projects in planning and/or implementation phases would be impractical.

This alternative was eliminated from detailed study because agency funding and contracting procedures are beyond the scope of this analysis. It would not address the need to clarify language in the ACS. See Appendix C for detailed discussion about the integration of vegetation management and restoration.

Change Watershed Analyses to Watershed Plans

This alternative would modify the ACS by changing the role of watershed analysis. Watershed analysis would become a decision-making process and would contain prescriptive steps and priorities for restoring watersheds. Watershed plans would be similar to Resource Management Plans, except they would be applicable to a smaller geographic area. Projects would be required to be designed consistent with these watershed plans.

This alternative was eliminated from detailed study because it does not respond to the Purpose and Need. It would deviate from the stated role of watershed analysis in the 1994 Northwest Forest Plan and the 1995 Federal Guide for Watershed Analysis. It would not clarify project documentation requirements.

Incorporate Watershed Analysis into Environmental Documentation

An alternative was suggested during the Draft SEIS comment period to add a guideline that directs decision-makers to incorporate watershed analysis into environmental documentation by reference. The concern is that watershed analysis results have not been adequately incorporated into NEPA documentation.

This concern is addressed through clarification of the information needed in project records document how projects are designed to follow the ACS. Alternative A specifically states: "The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for project planning..." and "To comply with Riparian Reserve standards and guidelines that reference ACS objectives, the decision maker must document that analysis has been completed, including a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability."

This alternative was eliminated from detailed study because it would not clarify documentation requirements and its essential elements are already included in an alternative under detailed consideration.

Required Procedures for Cumulative Watershed Impact Analysis

This alternative would add language to the ACS with specific requirements to use an equivalent roaded area (ERA) calculation for conducting cumulative watershed impact analysis. ERA analysis would be limited to watersheds of 5,000 - 15,000 acres. Projects with a low potential to affect water quality would be exempt from using the ERA calculation.

This alternative was eliminated from detailed study because it does not address the Purpose and Need to clarify language in the ACS. It would create an additional standard, which is not within the scope of this analysis.

Creating standards and guidelines specifying use of a single model could unnecessarily constrain interdisciplinary teams or require analysis that is not useful or relevant. NEPA requires that environmental analyses use the best available information. Specifying a particular model in the standards and guidelines would force analysts to use the model even if better methods are available or lead to endless amendments as models are updated and refined. Also, agency direction on how and when to complete cumulative effects analysis is already available.

Add a 10-year Time Frame for Achieving ACS objectives

Some groups suggested that a 10-year time frame for achievement of ACS objectives should be added to standards and guidelines that refer to ACS objectives. This alternative was considered, but eliminated from detailed study because it would conflict with language on page B-9 of the Northwest Forest Plan Record of Decision that states:

“...it may take decades, possibly more than a century, to accomplish all of [the ACS] objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years.”

Requiring projects to achieve ACS objectives in a 10-year time frame could establish an unreasonable standard. For instance, restoration of some components of old-growth forest habitats is likely to take more than a decade to accomplish.

Proposed Action Language Circulated for Scoping

The original language described in the Notice of Intent and circulated for scoping was eliminated from detailed study because new language better responds to the Purpose and Need, based on internal and public comment. The language circulated for scoping was intended to meet the same needs, but was found to lack some important elements. These were included in the Proposed Action analyzed in the draft SEIS, specifically, the importance of analysis at the watershed and broader scales to provide context.

Other Wording Suggestions

Two specific language additions were suggested that would add the following standards and guidelines to the Record of Decision:

Option 1: “Watershed analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed. Once a watershed analysis is completed for a watershed, the project record for each project proposed in that watershed will demonstrate how the management activity is consistent with each of the Aquatic Conservation Strategy objectives, including a finding that the proposed project or management action maintains the existing condition or moves it within the range of natural variability.”

Option 2: "While some objectives can only be fully achieved at a watershed or landscape scale, each project must be analyzed for its consistency with each Aquatic Conservation Strategy objective, and must be found to be consistent with the standard specified in the Standard and Guideline (for example, must "attain" or "not retard or prevent attainment.") The analysis must culminate in a synthesized conclusion of overall ACS consistency that considers all of the ACS objectives relevant to a given action. The intent (of the ACS) is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives. While some objectives can only be fully achieved at a watershed or landscape scale, each project, including projects or portions of projects not located within Riparian Reserves or Key Watersheds, must be found to be consistent with the ACS objectives. Projects that would retard or prevent attainment of these objectives would not comply with the ACS. The analysis must culminate in a synthesized conclusion of overall ACS consistency that considers all of the ACS objectives relevant to a given action."

Both of these alternatives were eliminated from detailed study because they are very similar to the No Action alternative.

Slight Changes to the Proposed Action

The following alternative was suggested to replace a portion of B-10:

"The four components of Aquatic Conservation Strategy (Riparian Reserves, Key Watersheds, watershed analysis and watershed restoration), in combination with application of pertinent standards and guidelines, are expected to maintain and restore ecosystem health in the long-term at the watershed and broader scales. No site-scale project can, or should be expected to achieve ACS objectives. To follow the ACS at the site-scale, decision makers must only demonstrate that projects comply with standards and guidelines in sections C and D. References to ACS objectives in the standards and guidelines in Sections C and D do not require that decision makers find that site-scale projects will attain ACS objectives. Some standards and guidelines refer to attaining, being consistent with meeting, or achieving ACS objectives. The intent of these references is that projects will use relevant information from applicable watershed analysis to provide context for project planning. These references do not mean that decision makers must find that a site-scale project will necessarily attain, be consistent with, or meet ACS objectives."

This alternative was not considered for detailed study because it is very similar to the Proposed Action.

Amend Riparian Reserves Standards and Guidelines

An alternative was considered to rewrite the Riparian Reserve standards and guidelines to clarify how land managers are to demonstrate that projects comply with them. The road management (RF-2) standards and guidelines (p. C-32) provide a model for how this alternative would be developed. These guidelines state: "For each existing or planned road, meet Aquatic Conservation Strategy objectives by:..." This alternative would apply that format to other standards and guidelines that refer to ACS objectives.

The agencies did not develop this alternative for detailed study because of the risk of deviation from the intent of the ACS inherent in a more extensive re-write. The need for action is limited to increased success planning and implementing projects that follow existing Northwest Forest Plan principles. Amending the Riparian Reserve standards and guidelines would go beyond the scope of meeting this need.

Eliminated References To The Management Direction In Attachment A As "Standards And Guidelines"

The Northwest Forest Plan uses the term "standards and guidelines" in two different ways. One usage refers to specific guidance for each of the land allocations. The other usage refers to all management direction included in Attachment A to the ROD, including objectives, land allocations, and the ecological basis for the standards and guidelines.

An alternative was considered to eliminate references to the management direction in attachment A as "standards and guidelines" everywhere except within specific portions of Sections C and D. The Proposed Action eliminates some, but not all of these references.

The agencies did not develop this alternative for detailed study because public comments to the Draft SEIS indicated a lack of public support for this approach. Many members of the public expressed that eliminating references to standards and guidelines as all of Attachment A would render the management direction in all sections but C and D unenforceable. Alternative A was developed to retain the existing references.

Alternatives Compared

Table 2. Alternatives Compared by Decision Factors and Issues

Decision Factor/ Issue	No Action	Proposed Action	Alternative A
Purpose and Need for Action Met	No, ambiguous language remains, agencies experience difficulty demonstrating how projects follow the ACS	Yes, ACS documentation requirements are clarified, success implementing projects is increased	Same as Proposed Action
Environmental Consequences	More similar to Alternative 1 than Alternative 9 in Northwest Forest Plan FSEIS	More similar to Alternative 9 in the Northwest Forest Plan FSEIS	Same as Proposed Action
Changed Conditions	No changed conditions that affect 1994 FSEIS findings	Same as No Action	Same as No Action
Scale of Evaluation of ACS Objectives	Ambiguous direction	Fifth- field watershed	Fifth- field watershed
Use of the Term Standards and Guidelines	Applies to all of Attachment A	Applies solely to Sections C and D	Same as No Action
Role of ACS objectives	Have been interpreted as "hard set of criteria" that apply to project planning	Clarifies that projects, in themselves cannot be expected to achieve ACS objectives	Same as Proposed Action; retains language that projects should be designed to "maintain and restore" aquatic ecosystem health
Risk of Changing the Original Intent of the ACS	Greatest risk	More risk	Less risk

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Alternatives Compared

Table 2. Alternatives Compared by Decision-Making Level

Decision-Making Level	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures
Local	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures
State	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures
Federal	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures
International	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures
Global	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures
Other	Alternative 1: No Action	Alternative 2: Aquatic Conservation Strategy	Alternative 3: Aquatic Conservation Strategy with Additional Measures

CHAPTER 3&4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Introduction

Chapter 3&4 presents the analytical basis for the comparison of alternatives presented in Chapter 2. "Chapter 3&4" is so titled because it combines the Affected Environment and Environmental Consequences sections required by the National Environmental Policy Act. These chapters were combined in the FSEIS for the Northwest Forest Plan.

Supplemental EISs are discussed at 40 CFR 1502.9 (c) "Agencies shall prepare supplements...if...the agency makes substantial changes in the Proposed Action that are relevant to environmental concerns." This Supplemental EIS considers whether the Proposed Action or Alternative A will change the environmental components described in the 1994 Northwest Forest Plan FSEIS. The effects findings are considered in light of new information or events that have occurred since 1994. Appendix B provides a detailed review of the findings in Chapter 3&4 of the 1994 FSEIS.

Affected Environment

The Affected Environment section considers the events and actions that have occurred since 1994 that may be relevant to effects of the alternatives.

First, the four components of the ACS are considered. Next, the timber sale program is discussed. Weather and natural disturbance events that have occurred since 1994 are considered. New listings under the Endangered Species Act and the Clean Water Act are also discussed. Monitoring accomplishments since 1994 are reviewed. Timber harvest on private land is considered. The Secure Rural Schools and Community Self-Determination Act of 2000 was also considered as a changed condition. Other aspects of the affected environment as described in 1994 are incorporated by reference and briefly described in Appendix B.

The Four Components of the Aquatic Conservation Strategy

This section of the Final SEIS considers the four components of the Aquatic Conservation Strategy and agency actions since 1994 relative to these components. The following discussions and tables about the four components of the ACS are excerpted from the Biological Assessment in Appendix D.

Riparian Reserves

Interim Riparian Reserve widths (as described in the Northwest Forest Plan) were designed to provide a high level of fish and riparian protection until watershed and site-specific analysis could be completed. Limited adjustment of the interim Riparian Reserve widths has occurred over the past ten years. Acreage has increased in the Riparian Reserves since 1994 due to updated information on the extent of this allocation.

Standards and guidelines have been established for Riparian Reserves, Key Watersheds, Designated Areas and Matrix, Late-Successional Reserves, Adaptive Management Areas, Managed Late-Successional Areas, and Administratively Withdrawn Areas. While not all of the standards and guidelines are aimed at protecting riparian-dependent resources, some of those that largely target conservation of terrestrial habitat will indirectly benefit riparian-dependent resources. For example, in Late-Successional Reserves, no harvest is allowed in stands over 80 years old west of the Cascades (110 years in the Northern Coast Range Adaptive Management Area) (USDA and USDI 1994b at p. C-12) and road construction is not recommended unless potential benefits exceed the costs of habitat impairment (Northwest Forest Plan Record of Decision at p. C-16). This will result in fewer ground-disturbing activities and their potential effects on aquatic and riparian habitat. The agencies have complied with standards and guidelines as demonstrated by implementation monitoring results between 1996-2001. Detailed information about monitoring results is in the Biological Assessment in Appendix D.

Key Watersheds

The Northwest Forest Plan established Key Watersheds to provide high water quality and refugia for at-risk fish species. Standards and guidelines specific to Key Watersheds are summarized on page C-7 of the Record of Decision. Key Watersheds have the highest priority for watershed restoration and require Watershed Analysis before activities may occur.

Road decommissioning is a priority in Key Watersheds. Implementation monitoring reports for the years 1999, 2000, and 2001 evaluated the status of road mileage in Key Watersheds. The trend has been a reduction in total road miles in Key Watersheds.

Of seven Key Watersheds reviewed for the 1999 report, six had avoided road construction, six had reduced road mileage, and one had maintained road mileage. Of approximately 1,861 system road miles existing in 1994, 84 miles had been decommissioned and 13.3 new miles had been constructed, a net reduction of 70.7 miles, at a ratio of 6.3 to 1. For non-system roads, 11.9 miles had been decommissioned while 10.9 miles had been constructed, for a net reduction of 1.0 mile (Regional Implementation Monitoring Team 1999).

There was a net reduction of 82.2 miles (4%) of system roads in 12 Key Watersheds reported in the 2000 implementation monitoring report (Regional Implementation Monitoring Team 2000). The ratio of miles of road decommissioned to miles of road constructed was 9.6 to 1 (91.8 miles to 9.6 miles). Information was not available for status of non-system roads in six of the Key Watersheds. A net reduction of 11.3 miles (5.9%) occurred in the other six Key Watersheds. The ratio of miles decommissioned to miles of road constructed was 2 to 1 (23 miles to 11.7 miles).

System road mileages were reduced by 195.4 miles (11%) in 12 Key Watersheds evaluated for the 2001 implementation monitoring report (Regional Implementation Monitoring Team 2001). The ratio of miles of road decommissioned to miles of road constructed was 90 to 1 (197.7 miles to 2.2 miles). The 2001 implementation monitoring effort did not report on non-system road mileage status for the Key Watersheds.

The status of road mileage in the 31 Key Watersheds evaluated by the Regional Implementation Monitoring Team is likely representative of Key Watersheds throughout the Northwest Forest Plan area. There has been an aggressive effort to reduce road mileage by road decommissioning, while new road construction has been extremely limited.

Road decommissioning has had positive benefits to the aquatic health of the Key Watersheds. The potential for catastrophic introduction of sediment if a culvert becomes plugged and the road prism fails is reduced. The concentration of flows by road segments augmenting the stream network is reduced. Chronic sediment delivery from native surface roads, fill slopes, and cut slopes has also been reduced.

Watershed Analysis

Watershed Analysis has been completed by the administrative units for the majority of Key Watersheds in the Northwest Forest Plan area. Watershed analyses have been completed for all of the Key Watersheds on 19 administrative units (see Table 4). Six administrative units have completed watershed analyses for most (67-91 percent) of their Key Watershed areas. Small federal land ownership, lack of cooperators, and/or lack of project activity made these key watersheds a low priority for Watershed Analysis.

Watershed analyses have been completed for the vast majority of the inventoried roadless areas in the Northwest Forest Plan area. Inventoried roadless areas occur only on National Forest lands in the Northwest Forest Plan area. Watershed analyses have been completed for 100% of the inventoried roadless areas in non-Key Watersheds on 10 administrative units. Eight administrative units have not completed watershed analyses for inventoried roadless areas in non-Key Watersheds.

Like Key Watersheds, Watershed Analysis is a low priority for many inventoried roadless areas in non-Key Watersheds due to small federal land ownership, lack of cooperators, land allocation designation, and/or lack of planned project activity. Data was not collected for the Modoc and Lassen National Forests.

Watershed Restoration

Watershed restoration results were reviewed for the years 1994 – 2001. Table 5 describes these achievements. The Klamath, Mendocino, Six Rivers, Shasta-Trinity National Forest and the Arcata, Redding and Ukiah BLM District accomplishments between 1994 and 2001. The other units display information only since 1998 (1994-1998 accomplishments are available in previously published documents). The values for Arcata administrative unit include the King Range National Conservation Area.

Table 3. Watershed Analysis Accomplishments

Administrative Unit	Federal Land Area with Completed Watershed Analyses (%)	Key Watershed Area with Completed Watershed Analyses (%)
Columbia River Gorge National Scenic Area	83.3	Not Applicable
Deschutes	82.9	100
Gifford Pinchot	99.1	100
Klamath	71	86
Lassen	No Data	No Data
Mendocino	93.1	100
Modoc	No Data	No Data
Mount Baker Snoqualmie	66.2	71
Mount Hood	100	100
Okanogan	100	100
Olympic	80.4	91
Rogue River	100	100
Six Rivers	80.7	85
Siskiyou	99.9	100
Shasta-Trinity	56.4	100
Siuslaw	98	100
Umpqua	98.5	82
Wenatchee	100	100
Willamette	100	100
Winema	55.7	100
Arcata	33.5	67
Coos Bay	93.1	100
Eugene	96.1	100
Klamath Falls	100	100
Medford	93	100
Redding	43.6	100
Roseburg	100	100
Salem	97.1	100
Ukiah	37	Not Applicable

Source: Biological Assessment (Appendix D)

Table 4. Aquatic Restoration Accomplishments 1998-2001.

Administrative Unit	Instream Structures (mi.)	Instream Passage (mi.)	Riparian (ac.)	Riparian (mi.)	Upland (ac.)	Road Decom. (mi)	Road Improved (mi.)	Wetland Fresh (ac.)
Columbia River Gorge NSA	3	0	375	0	0	6	3	137
Deschutes	26.3	0.7	513	30.5	529	104.3	15.4	207
Gifford Pinchot	178.3	1.1	1508	21.7	11	285.8	193.3	0
Klamath	325	ND	ND	ND	2907	136.2	ND	ND
Lassen	ND	ND	ND	ND	ND	ND	ND	ND
Mendocino	67	ND	ND	ND	567	62	ND	ND
Modoc	ND	ND	ND	ND	ND	ND	ND	ND
Mount Baker Snoqualmie	8.4	0.5	13	0	1	54.4	137.6	0
Mount Hood	50.3	24.1	176	13.3	309	42.4	16.1	4
Okanogan	0.6	0.2	15	1.3	47	24.2	19.2	0
Olympic	0.8	4.3	82	9.9	368	46.7	33.9	0
Rogue River	44.5	55	628	0	99	26.5	12.9	1
Six Rivers	120	ND	ND	ND	711	137	ND	ND
Siskiyou	62.8	39	2833	0	0	57.7	0	0
Shasta-Trinity	244	ND	ND	ND	1980	112.4	ND	ND
Siuslaw	40.2	0	70	1.9	0	34.4	10.6	0
Umpqua	12.3	3	11	2.3	4099	85.6	110	0
Wenatchee	8.3	27	337	63.6	4	91.9	92.2	18
Willamette	18	0	613	38.7	1784	43.4	65.1	7
Winema	0.3	0	0	0	1	150.1	0.2	0
Arcata	ND	ND	ND	ND	ND	33.5	ND	ND
Coos Bay	12.2	25.1	1533	0.3	0	28.8	2.1	0
Eugene	7.7	8.2	11	3.1	0	5.3	0.9	0

ND = No Data

Source: Biological Assessment (Appendix D)

The Timber Sale Program

The proposed amendment has the potential to affect agency success implementing the timber sale program. An indicator of success in implementing this program is the likelihood of the agencies to offer timber toward meeting the "Probable Sale Quantity." The Northwest Forest Plan established the term Probable Sale Quantity (PSQ) for estimates of average annual timber sale levels likely to be achieved. The Northwest Forest Plan used the term PSQ to acknowledge inherent uncertainties in the estimates (Johnson et al. 1993). The Northwest Forest Plan FSEIS (Chapter 3&4, p. 267) addressed the potential for the PSQ to change as National Forest and BLM District plans were completed or revised:

"Sustainable sale estimates will be made using more refined data and procedures available when Draft Forest and District Plans are completed or current plans are revised."

The Northwest Forest Plan FSEIS (Chapter 3&4, pp. 266 and 268) estimated the PSQ at 958 million board feet (MMBF), plus an additional 10 percent volume estimated in "other wood" (cull, sub-merchantable, firewood, and other products) for a total of 1.1 billion board feet.

By 1998, PSQ across the Northwest Forest Plan area was reduced by 15 percent, to 805 MMBF. Revised Riparian Reserve acreage estimates at the local administrative unit level were the single largest factor for the reductions in PSQ.

The Northwest Forest Plan assumed that 90 percent of the early decades PSQ would come from late-successional and old-growth forest, much of it through regeneration harvest. Individual Resource Management Plans outline assumptions for the amount and timing of silvicultural prescriptions such as thinning, partial cutting, and regeneration harvesting. The planning assumptions are based on the type of forests and the mix of older and younger forests available for harvest within each administrative unit.

Achievement of current PSQs for the individual administrative units, and for the Northwest Forest Plan area as a whole, are contingent on the ability to implement the range of silvicultural prescriptions outlined in individual Resource Management Plans. The agencies have not been able to implement the range of projects across the Northwest Forest Plan area partly because of the court interpretations in the PCFFA v NMFS litigation.

The agencies' annual timber sale offerings are shown in Figure 2. Between 1999 and 2002, the agencies offerings ranged from 148 to 400 million board feet per year. The reduction in sale offerings are the result of appeals and protests on individual projects, enjoined biological opinions in PCFFA v. NMFS litigation and the agencies' response to the litigation, and implementation of the Survey and Manage mitigation measures, among other reasons. Under the Preferred Alternative in the 2003 Survey and Manage Draft SEIS (USDA, USDI 2003), agencies are expected to come closer to meeting the PSQ.

The Oregon BLM regeneration harvest timber sales sold during fiscal years 1999-2001 were reduced by 89 percent when compared to the fiscal year 1995-1998 timeframe. Regeneration harvest sales of stands 200 years and older was reduced by 88 percent during this timeframe. The 1995-1998 timber sales were 22 percent less than the harvest assumptions under the Northwest Forest Plan (source: BLM Annual Program Summaries).

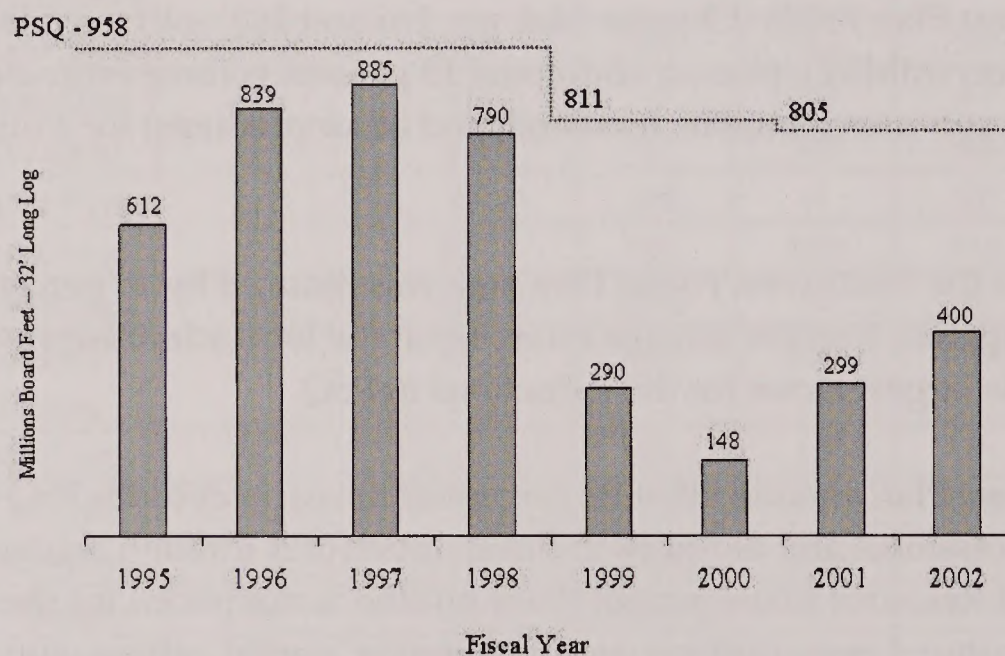


Figure 2. Timber Sale Volume Offered in Comparison to PSQ, 1995-2002

The following example shows the connection between the PCFFA litigation and the ability to meet the adjusted PSQ associated with Alternative 9. In Fiscal Years 2001, 2002, and 2003, the Oregon BLM provided interim guidance on how to prepare and offer timber sales, given the uncertainty resulting from the PCFFA litigation. The most recent BLM Information Bulletin of the three (IB-OR-2003-026) stated:

"The nature of the situation dictates the development of a FY 2003 Timber Sale Plan that continues to place interim emphasis on partial cuts. This emphasis (a continuing interim strategy) is driven by circumstances in an attempt to effectively utilize appropriated funds and implement the Allowable Sale Quantity (ASQ) and socioeconomic objectives of the [Northwest Forest Plan] to the maximum extent possible. It is anticipated that as the current challenges are resolved, the emphasis for balanced [Northwest Forest Plan] implementation, i.e., partial cuts, regeneration cuts, restoration as a requirement of timber sale contracts, etc., will resume."

These interim guidelines are not considered BLM policy, but they do indicate how the BLM has responded to the current uncertainty. If the BLM's interim approach were to be carried out over time, harvest levels more like Alternative 1 in the Northwest Forest Plan would be likely.

Monitoring and Adaptive Management

Monitoring and evaluation occurs as part of every Resource Management Plan. Many project-level decisions also include monitoring and adaptive management plans. Each National Forest and BLM District publishes monitoring results relevant to implementation of their respective Resource Management Plans. Project plans include monitoring to ensure they are implemented as planned.

The Northwest Forest Plan Record of Decision, Attachment A, Section E provides for a monitoring plan. This plan has been implemented: since 1996, implementation and effectiveness of the ACS across the Northwest Forest Plan area has been assessed through the Interagency Regional Program. This program conducts broad-scale monitoring on federally managed lands within the Northwest Forest Plan area and represents the combined monitoring efforts of eight federal agencies and partnerships with state agencies and academic institutions.

The 2001 field season marked the sixth consecutive year of the Northwest Forest Plan implementation monitoring program. This program is designed to determine whether the Record of Decision and its corresponding standards and guidelines are consistently followed across the Northwest Forest Plan area. Overall, compliance in meeting the Northwest Forest Plan standards and guidelines was 98 percent for the 21 projects and watersheds monitored in 2001 (Regional Implementation Monitoring Team 2001).

Detailed implementation monitoring results are available in the Biological Assessment and in individual monitoring reports. Other ongoing efforts to evaluate the effectiveness of the ACS at watershed and broader scales include the Aquatic Riparian Effectiveness Monitoring Plan (AREMP), which was approved in March 2001 and published in 2003 (Reeves et al. 2003). Under the AREMP, the condition of various watersheds across the Northwest Forest Plan area will be evaluated. Over time, AREMP will show whether watershed conditions are improving. The AREMP will provide information in a decade or more at the province scale.

The authors of the Aquatic Conservation Strategy stated that:

“We emphasize, however, that it will require time for this strategy to work. Because it is based on natural disturbance processes, it may take decades to over a century to accomplish all of its objectives.”

The Northwest Forest Plan also requires adaptive management. Adaptive management is a continuing process of action-based planning, monitoring, researching, evaluating, and adjusting with the objective of improving the implementation and achieving the goals of Alternative 9. Under the concept of adaptive management, new information will be evaluated and a decision will be made whether to make adjustments. Agencies will use monitoring results associated with individual unit plans to guide future actions. The watershed analysis process encourages informal updates as new information becomes available. Updated watershed analyses are likely to be an important future source of monitoring information.

Recent water quality monitoring reports have been published in Oregon.⁸ The “Oregon State of the Environment Report 2000” describes the conditions and trends of Oregon’s environment and suggests ecosystem indicators to help track environmental progress in the state. The Oregon Department of Environmental Quality used 129 ambient monitoring stations to develop the Oregon Water Quality Index Summary Report for Water Years 1992 – 2001 (Cude 2001). Water quality increased at 66 sites, decreased at 7 sites, and stayed the same at 56 sites.

⁸ Similar data are not available for California and Washington.

Potential Changed Conditions to the Affected Environment

The agencies considered whether large wildland fires (and subsequent rehabilitation and salvage activities), floods, (and subsequent rehabilitation and restoration activities), droughts or El Niño weather patterns occurring since 1994 changed the Affected Environment of Environmental Consequences described in FEMAT report or the Northwest Forest Plan FSEIS. These natural episodic disturbance events are an integral part of process-based management contained in the Aquatic Conservation Strategy. As stated in the FEMAT report (p. V-29) and the Northwest Forest Plan FSEIS (p. B-81):

“The heart of the approach is the recognition that fish and aquatic organisms evolved within a dynamic environment.”

The Northwest Forest Plan provided an adaptive management approach to environmental conditions and events. The Northwest Forest Plan recognized that ecosystems are not static but are ever changing in response to conditions and events.

The agencies determined that large fires, flood, drought, and El Niño events occurring since 1994 are not changed conditions that would invalidate the four components of the ACS (watershed analysis, watershed restoration, Key Watersheds, Riparian Reserves). The Northwest Forest Plan and Aquatic Conservation Strategy require consideration of natural disturbances in land management decisions. The events occurring since 1994 are factored into the planning process at all scales. The agencies have responded to events such as fires and floods with appropriate action that follows Northwest Forest Plan principles. Further information about potential changed conditions is in Appendix E.

New Listings under Endangered Species Act and Clean Water Act

Some people have suggested that new listings of fish under the Endangered Species Act, or new listings of streams as water quality impaired under the Clean Water Act, are changed conditions that may trigger a reconsideration of the Northwest Forest Plan.

The Northwest Forest Plan considered effects on 259 species of fish.

The Riparian Reserves were widened in Alternative 9 to increase the probability that viability of at-risk fish species would be maintained. Probability of maintaining viability of at-risk fish species increased from 65 percent to 80 percent due to the increased Riparian Reserve widths.

Approximately 20 species of fish have been proposed for listing, or listed under the Endangered Species Act since 1994.⁹ The Northwest Forest Plan anticipated Endangered Species Act listings (FSEIS Chapter 3&4 p. 202):

“...the [Aquatic Conservation] strategy can succeed at maintaining and restoring aquatic and riparian habitats regardless of what happens on non-Federal lands, but that would not ensure the population viability of many of the fish stocks evaluated in the SEIS. For these reasons, it is not possible to determine whether any of the alternatives in the SEIS would preclude listing of fish species under the Endangered Species Act.”

Nancy Foster, Ph.D., Acting Assistant Administrator for NMFS, wrote a comment letter to the Northwest Forest Plan Draft SEIS. In her letter, Dr. Foster wrote:

“The relatively large Riparian Reserves...combined with the requirements to conduct watershed analysis prior to any resource management activities and to implement comprehensive watershed restoration to accelerate habitat recovery, could avoid harm to anadromous fish in many watersheds throughout the range of the northern spotted owl.”

Ten consultations and/or conferences with the NOAA Fisheries or USFWS have occurred related to 28 Resource Management Plans within the Northwest Forest Plan area. There have been no significant changes to the Resource Management Plans since the dates of the Plan-level consultations and conferences. The effects of implementing the Resource Management Plans have not materially changed since the issuance of the Plan-level Biological and Conference Opinions. The Biological Assessment summarizes the history of Endangered Species Act consultation related to these species.

Approximately 83 sub-basins within the Northwest Forest Plan area contain streams that have been listed as impaired because of high water temperature and/or sediment loads. Several of these listings have occurred since 1994. This increase in listed waters is not necessarily related to an increase in degraded conditions.

⁹ See Appendix D for current Endangered Species Lists.

Since 1994, an intense effort has been underway to collect water quality information about streams that were not previously monitored. The increase in temperature listings has occurred in part because of widespread availability of inexpensive technology that can capture continuous, high quality water temperature data. Appendix F, p. 173 of the Northwest Forest Plan FSEIS notes that:

“Not all areas have been inventoried to cover all riparian and aquatic systems on federal lands within the range of the northern spotted owl.”

Judge William Dwyer ruled on whether the new listings under the Endangered Species Act and Clean Water Act constitute changed conditions under the Northwest Forest Plan:

“The claims regarding certain fish and the declining water quality of streams relates not to new data but to changes in legal status under the Endangered Species Act and...the Clean Water Act; while these listings are important, they do not, in themselves, require a new SEIS.”¹⁰

Timber Harvest on Non-Federal Land

Timber harvest on non-federal land was considered as a possible changed condition. The Northwest Forest Plan FSEIS acknowledged that state timber harvest rules might not be consistent with rules guiding harvest on federal lands. Harvests on non-federal lands were assumed in the 1994 FSEIS. The FSEIS stated that the choice of alternatives in the Northwest Forest Plan would not affect the rate of harvest on non-federal lands. Generally, the effects analysis assumed that non-federal timberlands would be harvested to the extent allowed by state law. Therefore, timber harvesting on non-federal lands since 1994 is not a changed condition and does not invalidate Northwest Forest Plan findings and assumptions.

Secure Rural Schools and Community Self-Determination Act of 2000

In 2000, the Secure Rural Schools and Community Self-Determination Act was signed. Under the Act, counties within the Northwest Forest Plan area elected to receive a guaranteed level of payment, instead of payments that are a direct percentage of federal receipts. Northwest Forest Plan FSEIS findings related to county payments may no longer be accurate.

¹⁰ ONRC Action v United States Forest Service Civ. No. 98-942 WD, August 2, 1999, p 17):

Environmental Consequences

Effects on the Four Components of the ACS

None of the alternatives would change any component of the ACS, nor would any alternative change the role of Riparian Reserves. Riparian-dependent resources would continue to receive primary emphasis and Riparian Reserve standards and guidelines would continue to be applied under all alternatives. Under all alternatives, the role, extent or standards and guidelines for Key Watersheds would not change. Watershed restoration would continue to occur under all alternatives.

The proposed amendment would clarify the documentation needed to comply with standards and guidelines that refer to not retarding or preventing, attaining, being consistent with, meeting or achieving ACS objectives. The proposed amendment would clarify that each project cannot be expected to achieve watershed-scale objectives. The amendment clarifies that short-term, site-level disturbance does not necessarily retard achievement of the watershed-scale objectives. The proposed amendment clarifies the documentation requirements expected of land managers.

The role of Watershed Analysis will not change in any of the alternatives. The direction related to Watershed Analysis in the proposed amendment is consistent with the 1995 Federal Guide for Watershed Analysis. Alternative A explicitly notes that if watershed analysis is not required or available, or does not contain relevant information, the project record will provide evidence that project effects were considered relative to the watershed condition.

The Proposed Action and Alternative A are both intended to contribute to agency success planning and implementing projects that follow Northwest Forest Plan principles, but are not intended to result in site-specific project design changes. Agencies will continue to attempt to implement the Resource Management Plans and attain their goals under all alternatives.

The assumptions of the benefits to fish and aquatic resources based upon the extent of Riparian Reserves as originally envisioned remain valid.

Changes have been proposed to the Survey and Manage program, changes have been proposed for the Forest Service planning rule (36 CFR 219), changes have been approved to the Forest Service appeal rule (36 CFR 215), and changes have been approved for categorical exclusions for both agencies. None of these changes would affect documentation requirements related to the ACS. None of these changes would change the components of the ACS.

The No Action alternative is associated with the greatest risk of not meeting the original intent of the ACS. This is because the existing language has been interpreted to imply too simplistic a relationship between projects and attainment of ACS objectives. The No Action alternative remains ambiguous about the scale at which progress toward attainment of ACS objectives is properly assessed.

The Proposed Action has the second greatest risk of not meeting the original intent of the ACS. The Proposed Action would clarify aspects of the ACS that are ambiguous under No Action. However, many members of the public expressed concern that the Proposed Action might result in unintended consequences that might deviate from the original intent of the ACS. Specifically, passages that refer to all of Northwest Forest Plan Record of Decision Attachment A as "standards and guidelines" would be removed, and a sentence that says "complying with the ACS means that an agency must manage riparian-dependent resources to maintain the existing condition or implement action to restore conditions."

Alternative A has the least risk of not meeting the original intent of the ACS. Alternative A clarifies the proper scales for evaluation of progress toward attainment of ACS objectives. However, Alternative A retains the passages that refer to all of Attachment A as management direction, and includes a sentence that states: "Under the Aquatic Conservation Strategy, the agencies must maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale over the long term."

Effects on the Timber Sale Program

The proposed amendment has the potential to affect agency success implementing the timber sale program envisioned under the Northwest Forest Plan. Timber sales are needed to achieve the socio-economic and ecosystem management goals of the Northwest Forest Plan. The degree to which current PSQs may be attained is the primary indicator for agency success in this regard.

As discussed under Affected Environment, the agencies have not been able to achieve the level of timber sales predicted for the Northwest Forest Plan. The Northwest Forest Plan assumed that 90 percent of the early decades PSQ would come from late-successional and old-growth forest, much of it through regeneration harvest. However, given the court interpretations of the ACS in the PCFFA litigation, the PSQ cannot be sustained, because few timber sales can be designed to avoid all disturbance to aquatic and/or riparian habitat components.

For instance, timber harvest removes canopy and exposes some land to accelerated erosion. Road work associated with the timber sale may result in short-term sedimentation. In the PCFFA litigation, the court considered these types of effects incompatible with achieving ACS objectives.

Future timber Sale levels under No Action are not precisely known. The agencies are funded to implement projects that follow Northwest Forest Plan principles, including timber sales. Their success implementing these projects has been hindered by current ACS interpretations.

In this regard, expected future harvest levels under No Action are more like harvest levels in Alternative 1 in the Northwest Forest Plan FSEIS. Under Alternative 1, "essentially all old-growth forests would be protected; forests adjacent to streams would receive significant protection to protect fish; and...some forest cover would be retained in areas where timber harvest is allowed."

Several public comments noted that protection of all old-growth forests is critical to achieving ACS objectives. This belief is not supported by the Northwest Forest Plan Record of Decision, which approved both the ACS and a timber program that expected harvest within some old-growth forest stands.

Alternative 1 would have resulted in a long-term PSQ that is less than one-tenth of the PSQ predicted for Alternative 9. Under No Action, timber sale levels are likely to fluctuate, but would likely drop over time. Without regeneration harvest and harvest within older forest stands, expected levels of harvest on non-reserved lands would not be sustainable.

As the BLM Information Bulletin demonstrates (see Appendix A), the agencies have been compelled to concentrate their efforts on offering timber in stands where commercial thinning opportunities exist. These opportunities will eventually diminish. Without regeneration harvests, timber Sale levels could approach Alternative 1 (in the 1994 FSEIS).

The degree to which the Proposed Action or Alternative A could attain PSQ associated with Alternative 9 (and adjusted in individual RMPs) cannot be predicted precisely. Groups who believe that timber sales within late-successional and old-growth forests are incompatible with the ACS are likely to continue to initiate appeals and litigation. The agencies believe that such harvest can be compatible with the ACS, as evidenced by the Northwest Forest Plan Record of Decision and supporting documentation, which included both the ACS and harvest within late-successional and old-growth forest in Matrix lands. Other factors besides ability to harvest within late-successional and old-growth forests may affect the agencies' ability to attain PSQ.

Land managers are expected to be more successful planning and implementing timber sales that follow Northwest Forest Plan principles under the Proposed Action and Alternative A because these alternatives clarify the documentation requirements to demonstrate that projects follow the ACS. This clarification is expected to result in the range of silvicultural prescriptions outlined in individual Resource Management Plans.

The agencies acknowledge the uncertainty about the degree to which the alternatives will result in the desired harvest levels. The NEPA regulations at 40 CFR 1502.22 provide guidance: "If, when evaluating significant adverse effects on the human environment, information essential to a reasoned choice among alternatives is either missing or incomplete..." The agencies do not believe that any alternative would result in adverse effects beyond those already considered in the Northwest Forest Plan FSEIS in 1994. All of the alternatives would result in impacts within the range predicted in 1994. Frequently, the 1994 Northwest Forest Plan FSEIS lumps Alternatives 1 and 9 in reference to effects on aquatic ecosystems.

The agencies considered the potential changed conditions and monitoring results, along with a review of the science related to the Northwest Forest Plan to make this determination. Thus, the uncertainty about how well each would meet pre-determined Northwest Forest Plan goals would not result in significant adverse effects that were not already considered in 1994.

Neither the Proposed Action nor Alternative A would directly affect timber sales covered under biological opinions that were enjoined in PCFFA v. NMFS. New biological opinions would have to be issued by NOAA Fisheries before these projects could be implemented. NOAA Fisheries and the USFWS have developed new approaches to consultation that do not rely on the ACS as a surrogate for Endangered Species Act jeopardy analysis.

Cumulative Effects on the Timber Sale Program

Changes have been proposed for the Forest Service planning rule (36 CFR 219), changes have been approved to the Forest Service appeal rule (36 CFR 215), and changes have been approved for categorical exclusions for both agencies. None of these changes would affect the design of projects that follow Northwest Forest Plan principles. None of the rule changes seek to increase PSQ associated with Alternative 9 (as adjusted in individual Resource Management Plans - RMPS) but they are likely to contribute to agency success meeting the PSQ.

Currently, the agencies are also considering further modification/elimination of the Survey and Manage mitigation measures in response to litigation. The effects of further modifications to the Survey and Manage mitigation measures are disclosed in a separate SEIS. The Preferred Alternative in the 2003 Draft SEIS for Survey and Manage would help increase agency success planning and implementing projects that follow Northwest Forest Plan principles. The changes do not seek to increase PSQ relative to Alternative 9, but is likely to contribute to agency success meeting the PSQs for individual RMPs.

A recent settlement agreement on a lawsuit pertaining to the federal timber sale program on Oregon and California (O&C) railroad lands reinforces the agencies' commitment to meeting PSQ. Under the settlement agreement, the FS and BLM agreed to attempt to meet PSQ in Matrix lands and increase restoration thinning in reserves as part of the settlement agreement. Individual Resource Management Plans will need to consider the role of O&C lands and determine future timber Sale levels. This settlement will not increase PSQ in the foreseeable future.

Effects on Other Activities that Implement the Northwest Forest Plan

As discussed in Chapter 1, several types of projects have the potential to be stopped or delayed due to current interpretations of the ACS. The language that has resulted in difficulty producing timber sales has also resulted in difficulty implementing the other types of projects. As stated in Chapter 1, the agencies plan and implement integrated projects; watershed restoration is often coupled with timber sales. Habitat conditions within Riparian Reserves have improved through precommercial and commercial thinning to promote more rapid development of large conifers for large woody debris recruitment and shade. Stream restoration work to restore habitat complexity, such as large wood placement or creation of off-channel rearing habitat, has also been accomplished. Any projects that are connected to timber sales could be stopped or delayed as described above.

Besides timber harvest, types of projects that could be hindered by impossible expectations include:

- Non-commercial forest management
- Actions associated with timber harvest, including transportation system treatments, culvert removal and replacement.
- Restoration silviculture in Riparian and Late-Successional Reserves, hazardous fuels reduction and forest health thinning, especially projects that include an element of commercial harvesting.
- Special uses, mining, livestock grazing, and recreation.

- Watershed restoration projects such as stream enhancements, fish passage improvements, and road decommissioning.¹¹

The Northwest Forest Plan did not include predictions of levels of achievement of any of these activities. The O&C settlement establishes a volume of timber to be produced from thinning within reserves; this implies a certain level of accomplishment.

Under No Action, the agencies would continue to plan projects that follow Northwest Forest Plan principles. These projects would be designed to comply with applicable standards and guidelines and contribute to meeting Resource Management Plan goals and objectives. Any of these projects could be subject to ambiguous expectations if they have any possible effects on the aquatic environment.

In general, the agencies expect to be more successful planning and implementing all types of projects that follow Northwest Forest Plan principles under the proposed amendment. The proposed amendment would clarify the documentation needed to demonstrate compliance with standards and guidelines.

Environmental Effects of No Action

The precise environmental effects of No Action are not known. Site-specific analysis under NEPA would continue to occur for all proposed projects. As discussed previously, agencies would continue to plan projects that follow Northwest Forest Plan principles (Alternative 9). Managers would attempt to implement their respective Resource Management Plans. However, some of these projects would be subject to ACS interpretations that may delay or stop the project. Based on public comments received on the Draft SEIS, the projects most likely to be stopped or delayed include an element of timber harvest within late-successional and old-growth forest.

The comments state that “faithful implementation of the ACS” would exclude such harvest. Given these attitudes, land managers would be encouraged to avoid such harvests (see BLM Information Bulletin for example of “interim” direction). In this regard, the results of No Action would more likely result in harvest levels (and environmental effects) more like Alternative 1.

¹¹ Other examples of restoration projects include (but are not limited to) prescribed burning, underplanting, snag and down wood management, invasive weed control. See Appendix D (Biological Evaluation) for further discussion about various categories of federal actions generically authorized in Resource Management Plans.

An ironic result of PCFFA v. NMFS is that federal timber sale planners have become reluctant to include restoration work in proposed timber sale projects if the restoration work may result in disturbance to aquatic or riparian habitats and triggers the need for Endangered Species Act consultation. Under No Action, projects with any short-term impact could have the potential to be stopped or delayed due to ACS misinterpretations, appeals, and litigation. In the short term, delaying or avoiding projects could have some positive benefits on the physical and biological environment, since the risk of short-term adverse effects from the projects would be reduced or eliminated. However, opportunities to restore watersheds through cumulative action over time could be foregone.

Fuels management projects, especially those that include an element of commercial harvesting, could be stopped or delayed due to ACS interpretations. Implementation of these projects is needed to achieve goals of the National Fire Plan. If the ACS interpretation results in delayed implementation of fuels reduction projects, the risk of adverse effects of wildland fire could increase.

Delays in restoration can have negative longer-term consequences to aquatic ecosystems. Under No Action, less active restoration would likely occur than under the Proposed Action. Reduced levels of restoration could reduce the rate of watershed recovery. Reductions and delays in project implementation could lead to increased risk of ongoing and catastrophic adverse effects from road failure and landslides. Appendix V-J of the FEMAT report stated that processes that have degraded watersheds would not be reversed without a comprehensive restoration program.

Over the long-term, No Action would likely have physical and biological effects that are more similar to Alternative 1 in the Northwest Forest Plan than Alternative 9. Frequently, the Northwest Forest Plan FSEIS lumped Alternatives 1 and 9 in reference to effects on aquatic ecosystems, because both of these alternatives included large Riparian Reserves and the Aquatic Conservation Strategy (see Appendix B). No Action is more like Alternative 1 to the extent fewer projects would likely be implemented.

Socio-economic Effects of No Action

FEMAT and the 1994 FSEIS include detailed socio-economic analysis, which is not re-evaluated here. This evaluation focuses on conditions related to timber harvest since 1999 and the 2000 Secure Rural Schools and Community Self-Determination Act.

As described previously, timber harvest levels expected under No Action are closer to levels predicted for Alternative 1 (in the 1994 FSEIS) than Alternative 9. Appendix B demonstrates that as a result of the reduced harvest levels, the No Action alternative would have socio-economic effects more similar to Alternative 1 than Alternative 9.

One difference between the 1994 analysis and the current situation is the de-linking of payments to counties from federal timber sale levels. In the past, a percentage of proceeds from timber sales on federal lands were paid to counties in lieu of taxes. These payments have declined over time as timber harvest has declined (see 1994 FSEIS for detailed discussion). In 2000, the Secure Rural Schools and Community Self-Determination Act was signed. The Act allowed counties to choose a guaranteed level of payments, rather than payments based on timber harvests. These payments are higher (on average) than assumptions made in 1994. Effects on counties (i.e. schools, roads, etc.) are more affected by laws such as the Secure Rural Schools Act than any of the ACS SEIS alternatives. Further information about payments to counties is in the analysis files.

These payments are scheduled to expire (with the Act) in 2006. In 2007, assuming the guaranteed payments are not reauthorized and payments are again sensitive to harvest levels, the effects of No Action are predicted to be most like Alternative 1 in the 1994 FSEIS.

Environmental Effects of Proposed Action and Alternative A

Neither the Proposed Action nor Alternative A changes the predicted effects of Alternative 9 in the Northwest Forest Plan (see Appendix B). Physical and biological effects are adequately described in the 1994 FSEIS.

The Northwest Forest Plan acknowledges that disturbances are natural occurrences within forested habitats and that management of this habitat without disturbance is impossible. Some level of disturbance is necessary, and even beneficial to the ecosystem. The clarified language for the ACS would result in improved decisions that reflect these concepts. Short-term adverse effects associated with disturbance (such as increased turbidity or streambed sedimentation) accrue from activities such as culvert removal and replacement, road obliteration, and other restoration activities in riparian areas or streams. These actions are intended to provide for long-term benefit to aquatic and riparian habitats.

The risk of adverse short-term, site-level impacts would increase proportionately to the amount of work implemented. Extent and duration of these effects would be considered in project-level analysis.

The agencies considered the potential effects of the proposed amendment (Proposed Action/Alternative A) on a variety of wildlife, fish, and plant species of concern. A Biological Evaluation (BE) was prepared that addresses species listed or proposed under the Endangered Species Act (ESA), as well as Forest Service sensitive species and their habitats within the Northwest Forest Plan area.

The change in language itself does not approve any specific projects and would not result in any effects on species or habitat. Further disclosure under NEPA and the ESA would occur before specific projects would be approved. The BE states that the proposed amendment "would have no effect to any ESA-listed species, or on designated or proposed critical habitat." As Appendix B demonstrates, the proposed amendment would not alter any Northwest Forest Plan conclusions or assumptions related to species viability.

Forest Service biologists have also determined that the proposed amendment would have "no impact" on any sensitive species identified on the Region 6 and 5 Regional Forester's Sensitive Species Lists. The species lists and BE are included in the analysis files.

NOAA Fisheries recently reviewed the status of all listed salmon and steelhead within the Northwest Forest Plan area. The FS and BLM have initiated consultation and a Biological Assessment (BA) prepared on these species for Resource Management Plans that would be amended under Alternative A. The BA is in Appendix D. The BA lists and describes the status of a fish species and considers effects on these species from all activities typically conducted on FS and BLM lands, including forest management, recreation, grazing, mining, watershed restoration, fish and wildlife habitat management, fire and fuels management, land acquisitions and exchanges, and special uses.

The BA concludes, "The land allocations result in approximately 80 percent of federal lands in some sort of reserve status across the Northwest Forest Plan area...This provides benefits to ESA-listed fish species by minimizing the amount of ground-disturbing activities and potential adverse impacts to water quality and fish habitat." The BA also states, "...the implementation of standards and guidelines, particularly those for Riparian Reserves, Key Watersheds, and Watershed Analysis are beneficial to ESA listed species and critical habitat by providing guidance for the design, prioritization and implementation of actions with the potential to affect riparian-dependent resources."

The BA acknowledges that the “land allocations where most of the potential ground-disturbing actions may occur is Matrix, Adaptive Management Areas and Managed Late-Successional Reserves.” The BA sums the land area within these three allocations and concludes that they cover approximately 7 to 26 percent of the Northwest Forest Plan area.

The BA states “The design, location, and timing of federal timber sales planned in accordance with the Northwest Forest Plan and its Aquatic Conservation Strategy will minimize the potential to: 1) reduce stream shade canopy to the extent that water temperatures are measurably increased; 2) reduce the supply of large wood debris; 3) alter stream flow regimes; and 4) accelerate surface erosion and mass wasting to the extent that there is increased sediment delivery and turbidity in streams....When conducting forest management and watershed restoration activities, there may be an increase in the potential for short-term adverse effects to ESA listed fish species, but these effects are within the original scope analyzed in earlier plan-level Biological Opinions.” The BA also concludes, “There is the potential for an increase in long-term benefits since restoration will be implemented...”

The Biological Assessment also finds that “In summary, the integration of the ACS components of WA, Key Watersheds, Riparian Reserves, watershed restoration, and associated [standards and guidelines] result in a management framework that minimizes or avoids the potential negative impacts of land management actions to water quality and fish habitat, while also restoring aquatic and riparian habitat conditions. This will enhance the long-term potential to sustain populations of at-risk fish species. Consequently, the ACS as a strategy and its individual components are beneficial to ESA-listed fish species and critical habitat.”

The BA goes on to state that, “Despite the protective and restorative aspects of NWFP and ACS implementation, a sub-set of actions will nevertheless result in adverse effects to ESA-listed and candidate fish species and proposed or designated critical habitats. These adverse effects are typically short-term in nature and often associated with watershed restoration efforts. Therefore, most of the RMPs ‘may affect, likely to adversely effect’ (LAA) [some] listed species or critical habitat.”

Socio-economic Effects of the Action Alternatives

Under the Proposed Action and Alternative A, the agencies would likely increase timber harvest levels, up to levels envisioned Alternative 9 in the 1994 FSEIS and adjusted in individual RMPs. To the extent that timber harvest levels reach these levels, the socio-economic effects of the action alternative are likely to be similar to the effects predicted for Alternative 9. As discussed previously, the Secure Rural Schools and Community Self-Determination Act of 2000 allowed counties to choose a guaranteed level of payments, rather than payments based on timber harvest. However, the Act expires in 2006. FEMAT and the 1994 FSEIS include detailed socio-economic analysis, which is not re-evaluated here.

Required Disclosures

This section focuses on Alternative A.

Relationship Between Short-term Uses and Long-term Productivity

Alternative A does not approve any short-term uses nor would it have any effects on long-term productivity. The ACS is still intended to protect long-term productivity of aquatic and riparian ecosystems within the Northwest Forest Plan area.

Conflicts with Other Plans

Other Analysis Efforts Within the Northwest Forest Plan Area

Other planning efforts are underway within the Northwest Forest Plan area that may affect various Resource Management Plans and how they are implemented. The agencies are currently considering alternatives to modify or eliminate the Survey and Manage mitigation measure in the Northwest Forest Plan. In 2001, the Secretaries of Agriculture and the Interior amended the Northwest Forest Plan with the Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures standards and guidelines.

Timber industry and county government associations litigated that decision. On September 30, 2002, the Secretaries entered into a settlement agreement with that required the BLM and Forest Service to examine an alternative "that replaces the Survey and Manage mitigation requirements with existing Forest Service and BLM special status species programs to achieve the goals of the Northwest Forest Plan through a more streamlined process" in a new SEIS.

The Draft SEIS to eliminate or modify the Survey and Manage Mitigation Measure Standards and Guidelines was published in April 2003 (USDA, USDI 2003).

Other ongoing analysis efforts within the Northwest Forest Plan area include the FS "Invasive Plant EIS," the BLM and FS "Port-Orford-cedar EIS," and the BLM "Vegetation Treatments Programmatic EIS." The Port-Orford-cedar EIS was necessitated by the Kern v. BLM decision of the Ninth Circuit. The BLM Vegetation Management EIS was initiated to (among other things) address problems created by court injunctions from the 1980's that still restrict BLM herbicide use.

The cumulative effects of proposed Northwest Forest Plan amendments are similar to effects analyzed in the 1994 Northwest Forest Plan FSEIS for Alternative 9. None of these efforts seek to change the predicted effects of the ACS. The decision whether or not to amend ACS language is not dependent on the other planning efforts.

As discussed in the 1994 FSEIS: "In addition, all ground-disturbing actions are conducted only after site-specific environmental analysis has been completed. This site-specific analysis will also analyze the cumulative impacts of the project alternatives on adjacent lands and resources, and on the watershed. This provides opportunities to detect and minimize cumulative environmental effects that cannot be ascertained at the programmatic level of this SEIS."

Other Concurrent Regulatory Proposals that May Affect Aquatic Resource Management

This SEIS incorporates by reference the discussion in the Northwest Forest Plan FSEIS concerning conflicts with other plans (USDA, USDI 1994a, pp. 3&4-319 and 320, and Appendix D). The proposed amendment would not alter the conclusions of the Northwest Forest Plan FSEIS regarding the possible conflicts with other plans.

Currently, several regulatory proposals about federal land management have been proposed or adopted. These proposals do not conflict with the Northwest Forest Plan.

Irretrievable and Irreversible Commitment of Resources

The proposed amendment does not make any irretrievable or irreversible commitments of resources beyond those predicted in the Northwest Forest Plan FSEIS (p. 3&4-321):

“Implementation of projects in accordance with the preferred alternative [Alternative 9] would result in some, if not all, loss of utility of habitat for late-successional and old-growth related species for the period of time needed for that habitat to grow again—a commitment of over a century. Some old-growth forest stands would be harvested under the preferred alternative. Although certain economic and social values will be saved at the point of harvest, these areas will then not contain as full an array of ecological and human values associated with old-growth forests as stands not harvested. Depending on the physiographic province and site, it would be several centuries or more before the full array of those characteristics return.”

Civil Rights and Environmental Justice

No disparate or adverse effects are identified to groups of people identified in Civil Rights statutes or Executive Order 12898 (Environmental Justice) from Alternative A. This finding is due largely to the administrative nature of the proposed change (i.e. a change in wording of an existing SEIS to clarify requirements). A Civil Rights Impact Analysis was prepared to comply with all applicable civil rights statutes, including Title VI of the Civil Rights Act of 1964.

Effects on Critical Elements

Both agencies require disclosure of effects on several critical elements of the human environment. These include air quality, Areas of Critical Environmental Concern, Cultural Resources, prime and unique farm and forest lands, floodplains, Native American religious concerns, threatened and endangered species, hazardous materials and solid waste, surface and ground water quality, wetlands and riparian zones, wild and scenic rivers, noxious weeds and environmental justice. The BLM requires that these elements be specifically addressed in environmental impact statements (H-1790-1).

The proposed amendment does not have the potential to affect any of these elements beyond the levels disclosed previously in the Northwest Forest Plan FSEIS (see Appendix B for details). Appendix D includes a Biological Assessment for certain fish species listed under the Endangered Species Act. The Biological Assessment summarizes the history of Endangered Species Act consultation related to these species. As discussed above, a Civil Rights Impact Analysis was prepared for the proposed amendment.

American Indian Rights and Resource Issues

Discussion about tribal treaty rights and trust resources starts on page 54 of the Northwest Forest Plan Record of Decision. American Indian treaty rights and trust resources will be protected under the proposed amendment. A reduction in timber sales may affect tribes' ability to secure resources for traditional and cultural uses, such as logs for canoes and long houses.

The proposed amendment would affect management of the Coquille Forest. These lands are owned by the Coquille Indian Tribe, are part of the Coquille Indian Reservation, and are held in trust by the United States. An Act of Congress in 1996 transferred ownership of about 5,400 acres of federal land within the Northwest Forest Plan area transferred to the Coquille Indian Tribe. The Act required that Coquille Forest be managed subject to the standards and guidelines of federal Forest Plans on adjacent or nearby federal lands. The proposed amendment has effects on tribal treaty rights and trust resources similar to Alternative 9 in the Northwest Forest Plan.

CHAPTER 5. CONSULTATION AND COORDINATION

This SEIS was prepared by an Interagency Interdisciplinary Team (see List of Preparers below). Several agencies provided consultation and coordination input. The primary agencies involved include:

Department of Commerce,

National Oceanic and Atmospheric Administration (NOAA Fisheries), ,

Regional Ecosystem Office Environmental Protection Agency

United States Department of the Interior,

Bureau of Land Management,

Bureau of Indian Affairs,

Solicitors' Office,

U.S. Fish and Wildlife Service (USFWS),

United States Department of Agriculture,

Forest Service,

Office of General Counsel,

Pacific Northwest Research Station

Distribution of the Draft Supplemental Environmental Impact Statement

This Draft Supplemental Environmental Impact Statement (SEIS) was mailed to the following individuals, groups, and organizations. The list includes elected officials; federal agencies; state, local, and county governments; American Indian Tribes and Nations; businesses; other organizations; libraries; and individuals. It is also available via the Internet at: <http://www.reo.gov/acs/>.

Elected Officials

California

Senator Barbara Boxer
Senator Dianne Feinstein
Representative Sam Farr
Representative Wally Herger
Representative Barbara Lee
Representative Robert Matsui
Representative George Miller
Representative Doug Ose
Representative Nancy Pelosi
Representative Mike Thompson
Representative Lynn Woolsey

Oregon

Senator Gordon Smith
Senator Ron Wyden
Representative Earl Blumenauer
Representative Peter DeFazio
Representative Darlene Hooley
Representative Greg Walden
Representative David Wu

Washington

Senator Maria Cantwell
Senator Patty Murray
Representative Brian Baird
Representative Norman Dicks
Representative Jennifer Dunn
Representative Richard Hastings
Representative Jay Inslee
Representative Rick Larsen
Representative Jim McDermott
Representative George Nethercutt
Representative Adam Smith

Intergovernmental Advisory Committee (to the Regional Ecosystem Office)

Dave Allen
U.S. Fish and Wildlife Service
Elaine Brong
Bureau of Land Management,
OR/WA
Lance Clark
State of Oregon Rep.
Kent Connaughton
USDA Forest Service, Region 5
Merv George, Jr.
CA Indian Forest and Fire
Management Council
Linda Goodman
USDA Forest Service, Region 6
Bob Graham
Natural Resources
Conservation Service
David Herrera
Northwest Indian Fisheries
Commission
Colonel Richard Hobernicht

U.S. Army Corps of Engineers
Jon Jarvis
National Park Service
Anne Kinsinger
U.S. Geological Survey
Robert Lohn
National Marine Fisheries
Service
Albert McKee
Representative of Washington
Counties
Rocky McVay
Association of O & C Counties
Mary Nichols
California Resources Agency
Robert Nichols
WA State Senior Executive
Policy Assistant
Jennifer Orme-Zavaleta
Environmental Protection
Agency

Michael Pool
Bureau of Land Management,
CA
Dave Powers
Environmental Protection
Agency
Tom Quigley
USDA Forest Service, PNW
George Smith
Intertribal Timber Council
Joan Smith
Representative of California
Counties
Stan M. Speaks
Bureau of Indian Affairs
Steve Thompson
U.S. Fish and Wildlife Service
CA/NV

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Federal Agencies

Advisory Council on Historic
Preservation
Bonneville Power
Administration
Environmental Protection
Agency
 Geographic Implementation
 Unit
 Operations Office
 Region 9
 Region 10
Federal Energy Regulatory
Commission
Portland Federal Executive
Board
Regional Ecosystem Office
U.S. Army
U.S. Coast Guard
U.S. Department of Agriculture
 Animal and Plant Health
 Inspection Service
 Environmental Coordinator of
 Ecological Services
 Forest Service
 Pacific Northwest Regional
 Office and Forests
 Pacific Southwest Regional
 Office and Forests

 Pacific Northwest Research
 Station
 Pacific Southwest Research
 Station
 National Agriculture Library
 Natural Resource
 Conservation Service
 OPA Publication Stockroom

U.S. Department of Commerce
 NOAA Fisheries (National
 Marine Fisheries Service)
U.S. Department of Defense
 Army Corp of Engineers
 PE PF
 Seattle District
 Walla Walla District
 Naval Submarine Base
 Bangor
U.S. Department of Energy
U.S. Department of Interior
 Bureau of Indian Affairs
 Bureau of Land Management
 National Park Service
 Office of Environmental Policy
 and Compliance
 Bureau of Reclamation
 Klamath Soil & Water

 Conservation Dist.
National Park Service
 Ft. Vancouver National
 Historic Site
 Olympic National Park
 Redwood National Park
 Redwood Sciences Lab
 Office of the Regional Solicitor
 Office of the Secretary
 Fish and Wildlife Service
U.S. Geological Survey
 Biological Resources
 Division
 Pacific Northwest District
U.S. Department of Justice
U.S. Ecosystem Restoration
 Office
U.S. Housing and Urban
 Development
U.S. Small Business
Administration
U.S. Department of
Transportation
Federal Aviation Administration
Federal Highway
Administration

State, County, and Local Governments

California

State of California
 Caltrans
 Department of Forestry
 Department of Forestry and
Fire Protection
 Department of Water
Resources
 Fish and Game Commission
 Lands Commission

 Office of the Governor
 Parks and Recreation
 Resources Agency
 State Clearinghouse
California Regional Water
Quality
City of Yreka
Colusa County, Agriculture
Department
Del Norte County Board of

County Supervisors
Eel - Russian River Commission
Glenn County
 Agriculture Department
 Board of Directors
 Board of Supervisors
 Coop Extension Office
 Planning Department
Humboldt County Board of
Supervisors

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Lake County Board of Supervisors
Mendocino County Board of Supervisors
Cooperative Extension
Planning Department
Water Agency
North California Water Association
Pinecrest Permittees Association
Shasta County Board of Supervisors
Siskiyou County Administrators
Board of Supervisors
Sonoma County Conservation Action
Tehama County Board of Supervisors
Planning Department
Trinity County, Board of County Supervisors

Colorado

San Miguel County

District of Columbia

Rural Utilities Service

Oregon

State of Oregon
Department of Agriculture
Department of Energy
Department of Environmental Quality
Department of Fish & Wildlife
Department of Forestry
Department of Geology and Mineral Industries
Department of Human Resources
Department of Revenue
Department of

Transportation
Employment Department
Executive Department
Farm Bureau Federation
Historic Preservation Office
Marine Board
Office of The Governor
Parks And Recreation
Public Interest Research Group
Small Business Administration
Water Resources Department
Association of O&C Counties
Association of Oregon Counties
City of Cottage Grove
City of Eugene, Parks and Recreation District
City of Klamath Falls
Coos County Board of Commissioners
Curry County Board of Commissioners
District 17 Watermaster
Douglas County Board of Commissioners
Natural Resources Conservation Service
Planning Department
Hood River County
Grants Pass & Josephine County Chamber of Commerce
Jackson County Commissioners
Jefferson County Commissioners
Josephine County Courthouse
Forestry Department
Planning Department
Klamath Basin Water Resources Advisory Commit
Klamath County
Klamath County Commissioners
Klamath Irrigation District
Lake County

Lane County Commissioner
Meadows Drainage District
Mohawk Watershed Planning Group
Northwest Power Planning Council
Portland Chamber of Commerce
Portland Water Bureau
Rogue Institute of Economy And Ecology
Rogue Valley Council of Governments
Southeastern Oregon Advisory Council
Umpqua Regional Council of Governments
Wasco County Commissioners

Washington

State of Washington
Department of Ecology
Department of Fish and Wildlife
Department of Natural Resources
Department of Transportation
Executive Policy Office
Office of The Governor
Chelan County Planning Department
City of Port Townsend
Clallam County Commisioner
Forks Chamber of Commerce
Jefferson County Commissioners
Lewis County Commissioners
Mason County Commissioner
Skagit County
Skamania County Planning Department
Washington State Association of Counties
Washington Environmental Council

American Indian Tribes and Nations

Big Valley Rancheria	Intertribal Timber Council	Resighini Rancheria
Blue Lake Rancheria	Jamestown S'kallam Tribe	Robinson Rancheria Pomo
Columbia River Inter-Tribal Fish Commission	Kalapooya Sacred Circle Alliance	Indian Tribe
Colville Confederated Tribes	Karuk Tribe of California	Rohnerville Rancheria
Colville Tribal Office	Klamath General Council	Round Valley Indian Tribes
Confederated Tribes of Grande Ronde Indians	Klamath Indian Game Commission	Samish Indian Tribe
Confederated Tribes of Lower Coos	Lower Elwha S'klallam Tribe	Sauk Suiattle Indian Tribal Council
Confederated Tribes of Siletz Indians of Oregon	Lummi Indian Business Council	Shasta Nation
Confederated Tribes of The Chehalis Reservation	Lummi Tribe of The Lummi Reservation	Shoalwater Bay Tribal Council
Confederated Tribes of The Warm Springs Reservation of Oregon	Makah Tribe	Siletz Tribal Council
Coquille Indian Tribe	Muckleshoot Indian Tribal Council	Snohomish Tribe
Covelo Indian Community	Native American Heritage Committee	Squaxin Island Tribal Council
Cow Creek Band of Umpqua Tribe of Indians	Native American Program	Stillaguamish Board of Directors
Cowlitz Indian Tribe	Oregon Legal Services Corp.	Suquamish Tribal Council
Cowlitz Wahkiakum Council of Government	Nisqually Indian Community Council	Swinomish Indian Tribal Community
Coyote Valley Rancheria	Nooksack Indian Tribal Council	Table Bluff Reservation
Elk Valley Rancheria	Northwest Indian Fisheries Commission	The Klamath Tribes
Grindstone Rancheria	Paskenta Band of The Nomlaki	Tolowa Nation
Hoh Tribe	Point-No-Point Treaty Council	Tsnungwe Council
Hoopa Tribal Fisheries Department	Port Gamble Band of S'klallam Indians	Tulalip Board of Directors
Hoopa Valley Tribal Council	Puyallup Tribal Council	Twin Rocks Inholders
	Quinault Indian Nation Reservation Ranch	Upper Lake Rancheria
		Upper Skagit Indian Tribal Council
		Yakama Indian Nation Tribal Council
		Yurok Tribe

Businesses

Adobe Rose	Council	Associated Oregon Loggers
Akins & Villavicencio Llp	American Forestry Association	B.S. Roads, Inc.
Alder Creek Lumber Co.	American Rivers, Inc.	BAC Logging
Alpha World International Corp.	Amerititle	Barnes & Associates, Inc.
American Forest and Paper Assn.	Armco	Berry Botanical Garden
American Forest Resource	Associated Oregon Industries	Blue Lake Forest Products, Inc

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Boise Cascade Corporation	Haglund, Kirtley, Kelley and Horngren	McFarland Cascade
Brecher & Volker LLP	Hampton Tree Farms	McKenzie River Guides
Brewley, Inc.	Harwood Products	Merlin Biological
Burlington Northern, Inc.	Heebphoto Inc.	Merrill & Ring
Buse Timber & Sales, Inc.	Hendrix Enterprises	Mountain Title Company
C & D Lumber Co.	Herbert Lumber Co.	Mt. Ashland Association
C.E. Exploration Co.	High Cascade, Inc.	Mt. Hood Meadows
Cascade Timber Consulting	Hillcrest Vineyard	Northwest Forest Resources
Cavanaugh Forest Industries	Home Animation Limited	Northwest Forestry Association
CH2M Hill Northwest	Huffman & Wright Timber Corporation	Northwest Mining Association
Clear Creek Copters, Inc.	Hull Oakes Lumber Co.	Northwest Timber Review
Clifford, Chance, Rogers and Wells Law Firm	Hydro Energy Development Corporation	Northwest Whitewater Excursions
Cobbett Law Office	Independent Thinning	NRM Corp
Columbia Forest Products	Indian Hill LLC	Offices of Marin Psychological Services
Columbia Helicopters, Inc.	Indian Hill Timber Co.	Oregon Forest Industry Council
Conifer Pacific, Inc.	Industrex Unlimited	Overland Express
Crown Pacific	J. Davidson & Sons Construction	Pacific Northwest Ski Areas Assn.
Crystal Mountain	JA Brennan Associates	Pacific Power and Light
David Evans and Associates, Inc.	Jeld Wen, Inc.	Pan Pacific Forestry
Deer Creek Timber, Inc.	K.D. Logging	Perkins Coie LLP
Deixis Consultant	Keller Lumber Co.	Plum Creek Timber Co.
Douglas County Lumber Co.	Ken Sorenson Logging, Inc.	Public Timber Purchasers Group
Douglas Timber Operators	Keslick And Son Modern Arboriculture	Quafco
Dreyer Lapidus Geyer & Van Horn, Inc.	Klamath Insurance Center	Rayonier, Inc.
DRJohnson Lumber Co.	Klamath Potato Growers Association	Resource Recovery Group, Inc.
Earthwise Excavation	Land & Water Consulting, Inc.	Resources Northwest Consultants
East Fork Lumber Co., Inc.	Laughing Horse Book Store	Richard L. Willis Logging
Edaw, Inc.	Law Office of Nancy Page	Roberts Cummings, Inc.
Eel River Sawmills, Inc.	Lee Enterprises	Rocking C Ranch
Enterprise Rent-A-Car	Leo Miller Contracting	Rogue Forest Protective Association
Ericson Air Crane Co.	Logging Engineering Int., Inc.	Rosboro Lumber Co.
Forestry and Resource Consulting	Lone Rock Timber Co.	Roseburg Forest Products
Freres Lumber Co., Inc.	Longview Fibre Corporation	Rough & Ready Lumber Co.
Freshwater Farms	Lusignan Forestry, Inc.	Salt Springs Logging
Future Logging Co.	M&A Broken Limb	Saltman and Stevens, P.C.
Galea Wildlife Consulting	Madroak Logging	SDS Lumber Company
Gary Cook & Associates	Marys River Lumber	Seneca Jones Timber Co.
Georgia Pacific West, Inc.	Mason Bruce & Girard, Inc.	Seneca Sawmill Company
Georgia Pacific Corporation	Mater Engineering, Ltd.	Sequoia Associates
Giustina Land & Timber Co.	Matesol	Sierra Pacific Industries
Glide Lumber Co.		
Gustin Enterprises		

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Proposal to Amend Wording About the Aquatic Conservation Strategy*

Silver Butte Timber
Simpson Door Co.
Simpson Investment Co.
Siskiyou Coop., Inc.
Snowy Butte Helicopters
South Umpqua State Bank
Sparkling and Son, Inc.
Spider Webb Ent., Inc.
Starfire Lumber Co.
Stevens Pass Ski Resort
Superior Lumber Co., Inc.
Sustainable Northwest
Swanson Group
Swanson Superior Forest
Product, Inc.
T.H. Ireland, Inc.

The Nicholoff Company
The Timber Company
Thinking, Inc.
Three Rivers Logging Co.
Timber Data Company
Timber Products Co.
Timberland Logging
Trinity River Lumber Co.
US Forest Industries, Inc.
US Timberlands Klamath Falls
LLC
Wards Creek Logging
Washington Belt & Drive
Systems
Washington Contract Loggers
Association

Washington Forest Law Center
Westbrook Land and Timber
Western Forest Protection
Association
Western Timber Co.
Western Wood Products
Association
Westest Logging
Weyerhaeuser Co.
Wilkins, Kaiser, & Olsen
Willamette Industries
Wolfe's Guide Service
Woody Contracting, Inc.
Woolley Enterprises, Inc.
WTD Industries, Inc.

Other Organizations

1000 Friends Of Oregon
1000 Friends Of The Earth
Alameda Creek Alliance
Allegheny Defense Project
Alpine Lakes Protection Society
Altacal Audubon Society Inc
American Alpine Institute
American Fisheries Society
American Lands
American Lands Alliance
Ancient Forest Defense Fund
Applegate Partnership
Applegate River Watershed Council
Arc-En-Ciel
Association of Northwest
Steelheaders
Association of Oregon Counties
Audubon Society
 Black Hills
 Columbia Gorge
 Corvallis
 Golden Gate
 Grays Harbor
 Kalmiopsis
 Kitsap
 Kittitas
 Klamath Basin
 Leavenworth

National
N. Central Washington
Pilchuck
Rainier
Redwood Chapter
Rogue Valley
San Juan Islands
Seattle
Siskiyou
Spokane
Umpqua Valley
BARK
Baron Family Partnership
Basketweavers Project
Bike To Nature
Biodiversity Northwest
Blue Ribbon Coalition
Breitenbush Community
Breitenbush Hot Springs
Butte Falls Advocates
California Cattlemens Association
California Coalition for Alternatives
to
Pesticides
California Lichen Society
California Native Plant Society
California Trout
California Wilderness Coalition

Californians For Alternatives to
Toxins
Cascadia Forest Alliance
Cascadia Wildlands Project
CATs
Central Cascades Alliance
Central Oregon Motorcycle and ATV
Club
Central Valley WQCB
Cheetwoot Wilderness Alliance
Citizens For Better Forestry
Citizens Interested In Bull Run
Clackamas Trout Unlimited
Clackamas-Marion Forest Prot Assn
Claggett Creek Watershed Council
Coast Range Association
Coastal Forest Alliance
Columbia Basin Wildlife Assn.
Communities for a Great Oregon
Concerned Friends of Ferry County
Cottage Grove Historical Society
Deer Creek Vly Ntrl Resrc Conserve
Defenders Of Wildlife
Ducks Unlimited-South Oregon
Earth Justice
EF! Wolf Action Network
Endangered Species Coalition
Environmental Protection

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Information Center
 Environmental Resources Ctr
 Essex Junction
 Environmental Group
 Forest Conservation Council
 Forest Guardians
 Forest Issues Group
 Forest Landowners of California
 Four Runners Four Wheel Drive Club
 Franciscan Sisters of the Poor
 Friends Of Clackamas River
 Friends Of Del Norte County
 Friends Of The Greensprings
 Friends Of The River
 Friends Of Trees
 Gifford Pinchot Task Force
 Global Peoples Assembly Network
 Great Lake United
 Headwaters
 High Country Citizens Alliance
 High Desert Trail Riders
 Hood Canal Coordinating Council
 Inland Empire Public Lands Council
 Institute for Applied Ecology
 Institute for Policy Research
 Izaak Walton League of America
 John Muir Project
 Keep Oregon Green
 Kettle Range Conservation Group
 Klamath Basin Snowdrifters
 Klamath Forest Alliance
 Klamath Siskiyou Wildlands Center
 Klamath Yacht Club
 La Canada Flintridge Trails Council
 Land & Water Fund Of The Rockies
 Lassen Forest Preservation Group
 League Of Wilderness Defenders
 Little River Committee
 M.U.D.D.
 Mattole Salmon Group
 Mazama Conservation Committee
 Mckenzie Guardians
 Mckenzie River Trust
 Mckenzie Watershed Council
 Mendocino Environmental Center
 Moose School Productions
 Mt. Adams Adopt-A-District
 Mt. Mazama Mushroom Association
 National Forest Protection Alliance
 National Wildlife Federation
 Native Fish Society
 Native Plant Society

Oregon
 Siskiyou
 Native Sky Wildlife Sanctuary
 Nature Conservancy
 Nature Society
 NCASI West Coast Regional Center
 North Coast Recreation Coalition
 Northwest Coalition For Alternatives To Pesticides
 Northwest Ecosystem Alliance
 Northwest Environmental Defense Fund
 Northwest Old-Growth Campaign
 Northwest Rafters Association
 Nuview -Evaluation & Learning
 Oak Ridge National Laboratory
 OFREG
 Olympic Forest Coalition
 Olympic Park Associates
 Orca Quest
 Oregon Bicycling Advisory Committee
 Oregon Cattlemans Association
 Oregon Coast Mycological Society
 Oregon Council Rock and Mineral Clubs
 Oregon Council Trout Unlimited
 Oregon High Desert Museum
 Oregon Historical Society
 Oregon Hunters Association
 Oregon Independent Miners/BMOA
 Oregon Institute of Technology
 Oregon Lands Coalition
 Oregon Mycological Society
 Oregon Natural Desert Association
 Oregon Natural Resources Council
 Oregon Park Associates
 Oregon Sheep Growers Association
 Oregon Small Woodlands Association
 Oregon Trail Coordinating Council
 Oregon Trout
 Oregon Waterfowl and Wetlands
 Oregon Wildlife Federation
 Oregonians for Action
 Oregonians for Food and Shelter
 Ouachita Watch League
 Pacific Biodiversity Institute
 Pacific Coast Federation of Fisherman's Assn.
 Pacific Crest Trail Association
 Pacific Northwest 4 Wheel Drive Assn.
 Pacific Rainforest Wildlife Guardians

Pacific Rivers Council
 Pacific Wildlife Research
 PEER
 People for the USA Happy Camp
 Predator Conservation Alliance
 Public Lands Foundation
 Reed College Forest Watch
 Rocky Mountain Ecosystem Defense
 Rogue Fly Fishers
 Roseburg Resources
 Rural Information Network
 Save Our Klamath Jobs
 Seattle Lichen Guild
 Shenandoah Ecosystems Defense Group
 Sierra Club
 Cascade Chapter
 Illinois Valley
 Many Rivers Group
 Northern Great Plains
 Northwest
 New York City Chapter
 Plant Society
 Rogue Group
 Tillamook
 Yahi Group
 Sierra Club Legal Defense Fund
 Siskiyou Project
 Siskiyou Regional Education Project
 Smith River Alliance
 SOCATS
 Society for Range Management
 Society of American Foresters
 South Carolina Forest Watch
 Southern Apalachian Biodiversity Project
 Southern Oregon Alliance for Resources
 Southern Oregon Forest Coalition
 Southern Oregon Timber Industry Association
 Southern Willamette Earth First!
 Steamboaters
 Stillwater Sciences
 Stop Oregon Litter and Vandalism
 Sutherlin Watershed Action Committee
 Takilma Watershed Committee
 TELAV
 The Bot Works, Inc.
 The Cascadians
 The Ecology Center
 The Lands Council
 The Mountaineers

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The Nature Conservancy
The Ptarmigans
The Wilderness Society
The Wildlife Society, Oregon Chapter
Trees of Mystery
Trout Unlimited
Umpqua Watersheds, Inc.
United Anglers of California
University of Oregon, Survival Center
Vancouver Wildlife

Washington Wilderness Coalition
Washington State Hi-Lakers
Washington State Snowmobile Association
Washington Trout
Washington Wilderness Coalition
Water For Life
WELC
West Montana Mycological
Western Environmental Law Center
Western Fire Ecology Center

Western Forest Industries Association
Western Forestry & Conservation Association
Western Mining Council
Wilderness Watch, NW Chapter
Willits Environmental Center
World Wildlife Fund
Xerces Society

Libraries, Schools, and Universities

Aberdeen Timberland Library
Albany City Library
Albina Library
Algona-Pacific Library
Amanda Park Timberland Library
Applegate Branch Library
Arcata Branch Library
Ashland Public Library
Auburn Library
Bandon Public Library
Battleground Library
Bellevue Regional Library
Bend Public Library
Black Diamond Library
Blemont Library
Bleyhl Community Library
Blue Lake Branch Library
Bothell Regional Library
Boulevard Park Library
Brownsville Public Library
Buena Library
Burien Library
Butte County Library
C Giles Hunt Memorial Library
California State University, Chico
Camas Public Library
Canyonville Branch Library
Capitol Hill Library
Carnation Library
Carpenter Memorial Library
Cascade Foothills Library
Cascade Locks Library
Cascade Pacific Library Network
Cascade Park Library
Central Library
Central Washington University
Chemult Branch Library
Chetco Public Library
City Of Eugene Library
City Of Springfield Library
Clallam Bay Library

Clark College Cannell Library
Colorado State University Libraries
Columbia Gorge
Community College
Coos Bay Public Library
Coquille Public Library
Corning City Library
Corvallis Benton Public Library
Cottage Grove Public Library
Cottonwood Library
Covington Library
Curry County Public Library
Dallas Library
Del Norte County Library District
Des Moines Library
Douglas County Library System
Dufur Community Library
Dunsmuir Library
Duvall Library
Eastern Washington University
Ellensburg Library
Entiat Public Library
Eugene Public Library
Everett Library Main Branch
Evergreen State College
Fairview-Columbia Library
Fairwood Library
Fall City Library
Fall River Library
Federal Way 320th Library
Federal Way Regional Library
Ferndale Branch Library
Flora M Laird Memorial Library
Forks Library
Fort Bragg Library
Fort Jones Branch Library
Fortuna Branch Library
Foster Library
Ft Vancouver Regional Library
Garberville Branch Library
Glendale Branch Library

Gold Beach Public Library
Goldendale Library
Granger Library
Grants Pass Library
Gregory Heights Library
Gresham Library
Happy Camp Library
Harrah Library
Hazel M Lewis Library
Hillsdale Library
Holgate Library
Hollywood Library
Hood River County Library
Hoodsport Timberland Library
Hoopa Branch Library
Hoquim Timberland Library
Humboldt County Library
Humboldt State University
Issaquah Library
Jackson County Library System
Jacksonville Public Library
Jefferson Co Library
Jefferson Public Library
Josephine County Library
Keizer Reading Connection
Kenmore Library
Kent Regional Library
Kingsgate Library
Kirkland Library
Klamath County Library
Klamath Union High School
Lacey Timberland Library
Lake County Library
Lake Forest Park Library
Lake Hills Library
Lakeport Library
Land-Air-Water Law Center
Lane Community College Library
Lapine Public Library
Lebanon Library
Lyons Public Library

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Middletown Library
Midland Library
Mildred Whipple Library (Drain Branch)
Mill City Public Library
Modoc County Library
Montague Branch Library
Mosier Public Library
Moxee Library
Mt. Shasta Library
Muckleshoot Library
Myrtle Creek Branch Library
Naches Library
Newport Way Library
Nile Library
North Bend Library
North Bend Public Library
North Bonneville Library
North Central Regional Library System
North Portland Library
North State Coop Library System
Northwest Library
Oak Run Community Library
Oakland Branch Library
Oakridge City Library
Olympia Timberland Library
Oregon Institute Of Technology
Oregon State University

Orland City Library
Parkdale Library
Peninsula College
Plumas County Library
Port Angeles Library
Port Townsend Library
Quinney Natural Resources Library
Red Bluff Library

Redbud Library
Redmond Public Library
Redmond Regional Library
Reedsport Branch Library
Richmond Beach Library
Riddle Branch Library
Ridgefield Library
Rio Dell Branch
Rockwood Library
Roseburg Library
Roslyn Library
Round Valley Public Library
Ruch Branch Library
Salem Public Library
Salem State College, Dept Of Geography
Sammamish Library
Seattle Public Library
Selah Library
Sellwood-Moreland Library
Sequim Library
Shasta Bible College Library
Shasta College Library
Shasta County Library
Shasta Lake Gateway Library
Shelton Timberland Library
Shingletown Library
Shoreline Library
Simpson College & Graduate School
Siskiyou County Library
Sisters Public Library
Siuslaw Public Library District
Skykomish Library
Skyway Library
Snoqualmie Library
Southeast Yakima Library
Southern Oregon University
Southwest Oregon Community College Library
Springfield Public Library
St. Johns Library
State of Illinois University
Stayton Public Library
Stevenson Library
Summit View Library

Sunnyside Library
Sunriver Area Public Library
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Sweet Home Public Library
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Trinidad Elementary School Library
Trinity County Library
Tukwila Library
Tulelake Library
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Union Gap Library
University of Oregon Library
University of California
University of Washington
Upper Lake Library
Valley View Library
Vancouver Library
Vashon Library
Wapato Library
Washington State University Library
Washougal Library
West Salem Library
White Center Library
White Salmon Valley Library
White Swan Library
Willits Library
Willow Creek Branch
Willows Public Library
Winston Branch Library
Woodinville Library
Woodland Library
Woodmont Library
Woodstock Library
World Botanical Association
Yakima Valley Regional Library
Yoncalla Branch Library
Yreka Library
Zillah Library

Media

Ashland Daily Tidings
Environmental Media Services
The Associated Press

The Chronicle
The Columbian
KMTX TV

News Review

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Nancy Crom

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Kirk Dubose
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Barbara Dudman
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Sarah Duncan
Anne Dunlap
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James A. Dunn
Nathan Dupre
Moses Durazo
Andrea Dworkin
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Lars Ecklund
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Proposal to Amend Wording About the Aquatic Conservation Strategy

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APPENDIX A

SELECTED RECORDS*



*Selected records include a Regional Ecosystem Office Memorandum dated 11/09/1999; a BLM Bulletin dated 11/07/2002; the PCFFA v. NMFS Court Order dated 09/30/99; a declaration from Dr. Gordon Reeves; and 9th Circuit Opinion related to the case.

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MEMORANDUM

DATE: November 9, 1999

To: Regional Interagency Executive Committee Members

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FROM: Curtis A. Loop, Acting Executive Director

SUBJECT: Regional Ecosystem Office Analysis and Interpretation of Three Issues
Related to Northwest Forest Plan Requirements for Aquatic Conservation Strategy Consistency
Determinations

Enclosed is the Regional Ecosystem Office (REO) final report to the Regional Interagency Executive Committee (RIEC) in response to its December 17, 1998, request for facilitation of discussions seeking interagency agreement clarifying Record of Decision (ROD) interpretation for several questions related to implementation of the Aquatic Conservation Strategy (ACS). Pursuant to direction provided during the October 6, 1998, November 5, 1998, and October 20, 1999, RIEC meetings, and in the December 17, 1998, memorandum transmitting the request, we completed discussions on three ACS interpretation issues:

- ☛ NFP Record of Decision (ROD) requirements for determining project consistency with ACS objectives.

👉 The role of Standards and Guidelines (S&Gs) that mitigate the effect of new road construction on aquatic resources.

👉 The role of Late-Successional Reserves and designated roadless areas as components of the ACS.

Also in response to the December 17, 1998, guidance regarding specific roles of the REO for review of these issues, we have sought to:

- 👉 Facilitate interagency and interdisciplinary discussions of the issues and questions by agency scientists, resource experts, and legal counsel.
- 👉 Summarize science, legal, and policy information and findings from these discussions.
- 👉 Apply the information and findings in seeking interagency agreement on responses to the referred questions.
- 👉 Help agencies develop methods or procedures for implementing the agreements by field units.
- 👉 Recommend appropriate follow-up actions or investigations.

Summary and Conclusions

Following is a summary of the ACS Interagency Review Managers Teams' findings. This summary does not stand alone. It is essential that you refer to the enclosed document for a more complete discussion of the Teams' efforts in development of joint agency positions on the above issues.

ISSUE: NFP Record of Decision (ROD) requirements for determining project consistency with ACS objectives.

- 👉 The *ROD* established the nine ACS objectives as S&Gs that apply across all land allocations.
- 👉 The ACS objectives serve as broad landscape management objectives, directed at the watershed-scale, to be achieved over time by maintaining and restoring natural processes through implementation of the NFP. In addition to this broad landscape role, the *ROD* also established the ACS objectives as S&Gs that apply to all actions by their inclusion in Section B of Attachment A of the *ROD*.
- 👉 When assessing the effects of actions on relevant ACS objectives, multiple analytical scales may be required, depending on the nature and scope of the action and the particular ACS objective. However, the watershed-scale (the scale of watershed analysis) is the appropriate landscape context for determining whether actions are consistent with the ACS objectives.
- 👉 The *ROD* does not explicitly establish a standard temporal scale for evaluating project consistency with ACS objectives. Selection of a temporal scale depends on existing watershed conditions and the existing watershed recovery trajectory and, regarding specific projects, must consider the temporal nature of potential impacts.
- 👉 There is no *ROD* requirement to assess cumulative effects when making ACS consistency findings. Cumulative effects are analyzed in watershed analysis, National Environmental Policy Act (NEPA) processes, and Endangered Species Act (ESA) consultations.

☞ Watershed analyses typically provide the necessary contextual information for making ACS consistency determinations. If watershed-scale information needed for making ACS consistency determinations is not available (e.g., from existing watershed analysis, NEPA analysis, ESA consultations) then new or updated watershed analysis may be required, even outside of Key Watersheds and Riparian Reserves.

ISSUE: The role of Standards and Guidelines (S&Gs) that mitigate the effect of new road construction on aquatic resources.

☞ The S&G WR-3 (Do not use mitigation or planned restoration as a substitute for preventing habitat degradation) is intended to ensure that agencies do not rely on watershed or habitat restoration projects as mitigation to allow avoidable impacts from projects planned in Riparian Reserves.

☞ This S&G does not preclude consideration of restoration projects that reduce road mileage in Key Watersheds to offset new road construction. Nor does it obviate the need to comply with the many other S&Gs designed to minimize the effects of new road construction.

☞ The scale at which the no net road mileage increase standard is applied is the Key Watershed scale.

☞ The baseline road mileage against which new road construction is compared is the mileage that existed on May 13, 1994, the effective date of the *ROD*.

☞ The term road decommissioning is not expressly defined in the *ROD*, however, the intent is to evaluate and reduce existing road related impacts to meet ACS objectives. Road mileage reductions need to occur prior to or concurrent with new road construction in Key Watersheds.

ISSUE: The role of Late-Successional Reserves and designated roadless areas as components of the ACS.

☞ LSRs are an important component of the ACS, however, there is no requirement in the *ROD* for LSR Assessments to address ACS objectives.

☞ ACS objectives are addressed in NEPA documents, supported by information from watershed analysis.

☞ Roadless areas, both in and outside Key Watersheds, have additional S&Gs designed to protect water quality because of identified concerns over unstable lands. Watershed analyses is required prior to management activities in all watersheds that contain roadless areas.

☞ Inside Key Watersheds, no new roads are to be built in remaining roadbeds areas.

This report is a product of an interagency process that would not have been possible without the expert knowledge and assistance provided by members of all staff involved. Thank you for the opportunity to work on this issue. Please let me know if we can provide any additional information or answer any questions about our review.

Enclosure: July 21, 1999 Draft 1357_ver2

**Response to the January 17, 1999 Regional Interagency Executive Committee
Request for REO Assistance in Facilitating Interagency Agreement on
Four Aquatic Conservation Strategy Issues**

Introduction

On January 17, 1999, the Regional Interagency Executive Committee (RIEC) requested that the Regional Ecosystem Office (REO) facilitate a process for reaching interagency agreement on the interpretation of four issues regarding Northwest Forest Plan (NFP) requirements for determining the consistency of proposed land management actions with the Aquatic Conservation Strategy (ACS). Three of these issues, which arose from recent efforts to complete Endangered Species Act (ESA) consultations on listed fish species, are:

1. NFP Record of Decision (*ROD*) requirements for determining project consistency with ACS objectives.
2. The role of Standards and Guidelines (S&Gs) that mitigate the effect of new road construction on aquatic resources.
3. The role of Late-Successional Reserves and designated roadless areas as components of the ACS.

In response to this request, the REO convened a team of senior agency managers who have been meeting regularly to address these issues. Since none of the issues were new, the RIEC made it clear that they intended for the interagency effort to start with a review of previous guidance and direction that had been issued on the subjects and to seek a higher level of interagency agreement on the previous interpretations. The interagency manager's team began the review by establishing teams comprised of senior technical staff to address each of the ACS issues. These technical teams in turn compiled and reviewed existing guidance and direction pertaining to the subject issues, as well as all relevant NFP *ROD* citations. Recognizing that the *ROD* established the legal direction for these issues, the technical teams also reviewed pertinent references from the FEMAT Report and FSEIS documents, which offered insight into the purpose and intent of some of the *ROD* requirements.

Each of the technical teams presented its reports to the Managers Team, and incorporated changes based on interagency discussions and agreements reached during those meetings. Each of the technical teams completed stand-alone reports, which include extensive references and discussion. What follows are condensed versions of the technical team reports, presented in question and answer format, which respond directly to the ACS issues referred by the RIEC. The responses represent full and unanimous agreement among the agencies participating in the review on the stated interpretations.

Proposed Interagency Interpretations

ISSUE: NFP Record of Decision requirements for determining project consistency with ACS objectives.

The RIEC asked the REO to facilitate interagency agreement in clarifying *ROD* requirements for determining and documenting the consistency of projects with ACS objectives. To focus this interpretation, the RIEC identified four questions.

Question #1: *What is the relationship of the nine ACS objectives (ROD, B-11) with individual or groups of land management actions? Are the ACS objectives intended to be Standards and Guidelines for individual projects? Must they be addressed individually or collectively when determining project consistency with the objectives? Are they instead broad objectives to be achieved across the landscape through the collective effect of all management actions, but not applied to individual projects?*

Based on the language in the *ROD* in both the outline to Attachment A and on pages B-9, B-10, and B-11, it is clear that the ACS objectives are considered S&Gs that apply to all management activities on Forest Service and BLM lands within the NFP area.

The *ROD* (Attachment A, page i) indicates that the six sections of Attachment A collectively comprise the complete set of S&Gs that direct how the NFP is implemented. Two of the sections are particularly relevant to the ACS. Section B is where the ACS is described, including a background discussion of the objectives and management emphases for Riparian Reserves, Key Watersheds, watershed analysis, and watershed restoration. Section C includes specific S&Gs that apply to certain types of projects and land allocation categories, including the Riparian Reserve and Key Watershed land designations. Following the guidance in both Section B and Section C is required to implement projects consistent with the ACS.

As originally developed, the ACS objectives serve as broad landscape management objectives, directed at the watershed-scale, to be achieved over time by maintaining and restoring natural processes through implementation of the NFP. In addition to this broad landscape role, the *ROD* also established the ACS objectives as S&Gs that apply to all actions by their inclusion in Section B of Attachment A. The S&Gs in Section C of the *ROD* were developed to regulate management actions in a way that promotes the attainment of these landscape-scale objectives by focusing the review of proposed management actions to determine compatibility with the ACS objectives (*ROD*, B-10). However, the S&Gs in Section C do not by themselves always guarantee that actions will be consistent with ACS objectives, in part due to the need to consider the results of watershed analysis. Thus, the *ROD* requires decision makers to confirm (i.e., make findings) that projects that comply with the S&Gs, either meet, attain, or do not retard or prevent attainment of the ACS objectives. This requirement applies to all FS and BLM management actions in the NFP, not just actions within Key Watersheds and Riparian Reserves.

The *ROD* does not explicitly address whether the nine ACS objectives should be considered individually or collectively when assessing projects. Either approach may be appropriate, depending on local circumstances. Regardless of the approach used, it must culminate in a synthesized conclusion of overall ACS consistency that considers all of the ACS objectives relevant to a given action. Consideration of the objectives individually may facilitate the decision maker's ability to differentiate and address those objectives affected by a given action. Consideration of the objectives collectively may facilitate the decision makers ability to derive an overall conclusion of ACS consistency without the potentially difficult task of aggregating the results of individual objective assessments.

Question #2: *What are the appropriate temporal and spatial scales for determining project consistency with the ACS objectives?*

The *ROD* is explicit that watershed analysis will be used to establish the appropriate geographic context for assessing the baseline condition and evaluating whether actions are consistent with the ACS objectives (*ROD*, B-10, B-20, B-23, B-30). Watershed analysis has been performed on a variety of spatial scales, ranging from the 4th field USGS hydrologic unit code scale down to the 7th field subwatershed-scale. The *ROD* defined the watershed-scale as approximately 20-200 square miles, which generally corresponds with the scale of the 5th field USGS hydrologic unit code hierarchy.

In general, the ACS provides a framework for managing aquatic ecosystems primarily at watershed and landscape (i.e., multiple watershed) scales. The ACS objectives describe the attributes and distribution of aquatic ecosystems believed necessary to provide conditions for maintaining currently strong populations of fish and other aquatic and riparian dependent organisms and to recover currently degraded ecosystems. To account for the dynamic nature of conditions within watersheds, the ACS objectives also focus on maintaining aquatic ecosystems within the natural range of variability at the site, subwatershed, and watershed-scales. Please refer to Benda et al. (1998) for a discussion of landscape system dynamics.

Because the ACS was designed to maintain and restore ecosystem health at watershed and landscape scales, rather than the scale of individual projects, the *ROD* established watershed analysis at the 5th field watershed-scale as the appropriate geographic context for assessing the consistency of actions with the ACS. The results from watershed analyses completed at scales other than the 5th field watershed may also be useful when making ACS consistency findings. For instance, some 5th field watersheds may be too large or complex ecologically to be analyzed effectively. Watershed analysis, as a consequence, has been conducted in 5th field and aggregates of 6th field watersheds.

Although the 5th field watershed-scale provides the appropriate geographic context for assessing ACS consistency, it is important to note that the ecosystem functions and processes represented by the ACS objectives operate at multiple scales, including site, reach, subwatershed, watershed, river basin and population. Similarly, the effects of land management activities on these functions and processes can occur at multiple scales, depending on the scope and magnitude of the action, current baseline conditions, and the sensitivity of the affected resources. Before a decision maker can assess whether an action would retard or prevent attainment of ACS objectives, the full extent of project effects to aquatic ecosystem objectives must first be assessed. Assessments of project effects should address the spatial scales that are relevant to the proposed action and for the ACS objectives that would be affected.

In summary, determining consistency at the site scale requires understanding of the required range of variability established at watershed, provincial, or regional scales. An action that results in a degraded condition at individual sites or degraded subwatersheds cannot always be interpreted as failure to comply with the ACS. To make findings of an action's consistency with the ACS, the decision maker must take into consideration the scope and magnitude of the action's effects, both positive and negative, at scales appropriate for the relevant ACS objectives. Such findings should ensure the conservation of the natural range of variability at the watershed level. Actions with similar effects might be considered consistent with the ACS in one watershed and not in another depending on the significance of the action within each watershed context.

Temporal scales relevant to the individual ACS objectives may vary with the spatial scales embodied in the objectives. Generally, as spatial scales increase, the relevant temporal scales associated with the objectives also increase, but the frequency for iterative analyses decreases (*ROD*, B-22). For example, project or stream reach-scale effects might best be viewed using temporal scales of months to years, and justify more frequent assessment iterations, while watershed and broader landscape-scale processes and effects would likely be more relevant over longer time scales; e.g., years to decades, but generally warrant less frequent analysis.

The *ROD* does not explicitly establish a standard temporal scale for evaluating project consistency with ACS objectives. Selection of a temporal scale depends on existing watershed conditions, and the existing watershed recovery trajectory, and, regarding specific projects, must consider the temporal nature of potential impacts. For instance, in the case of restoration projects, short-term negative impacts can be significant, and should be clearly offset by long-term benefits. The *ROD* recognizes that “[b]ecause the ACS is based on natural disturbance processes, it may take decades, possibly more than a century, to accomplish all of its objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years.” (*ROD*, B-9). In evaluating consistency with ACS objectives, field units have generally recognized that adverse effects of management actions that last several years may still be consistent with ACS objectives if they do not affect the underlying processes and functions, have significant long-term benefits, and do not have short-term effects with watershed-scale significance (e.g., compromise the persistence of local species). On the other hand, effects that impact watershed-scale processes or functions or that persist for a decade or longer would impair the attainment of ACS objectives and would be inconsistent.

Question #3: *Should ACS consistency determinations address the cumulative effects of multiple management actions or groups of projects? If so, at what scale and using what methods? If individual actions are assessed individually during ACS consistency determinations, how can the cumulative effect of multiple projects be assessed?*

The *ROD* does not explicitly require that cumulative effects be considered when making ACS consistency findings. However, the requirement to use watershed analysis reports to establish the geographic context for evaluating project compliance with ACS objectives necessarily requires aquatic analysts and decision makers to consider the cumulative effect of past management activities that have, and continue to affect processes throughout the watershed, as reflected in the characterization of current conditions in the watershed, and anticipated future conditions.

By using watershed analysis reports to address cumulative effects when evaluating the consistency of actions with ACS objectives, the role of non-federal lands in the watershed is also considered. Thus, given that cumulative effects accruing on non-federal land may affect federal managers’ ability to achieve ACS consistency, existing interagency direction for conducting watershed analysis is clear on the importance of considering non-federal lands in the analysis:

“Even though the Federal watershed analysis process is in no way intended to regulate non-Federal lands, analysis teams, as guided by responsible officials, will consider the interactions of various land ownerships in the watershed. Federal land management decisions based on the results of watershed analysis need to consider conditions and activities on adjacent non-federal lands, especially to evaluate cumulative effects, as they affect public lands, pursuant to NFMA, NEPA, ESA, CWA, O&C Act, and other pertinent statutes. Consideration of these interactions is important to an overall understanding of ecological functions and processes.” (*Ecosystem Analysis at the Watershed Scale: Federal Guide for Watershed Analysis*, page 11)

The Federal Guide for Watershed Analysis also describes important considerations for how non-federal lands should be addressed in watershed analysis. Notwithstanding the fact that the interactions of various land ownerships are considered during watershed analysis, the *ROD* is clear that the ACS objectives only apply to FS and BLM lands within the range of the northern spotted owl.

Consideration of cumulative effects is not limited to watershed analysis. Cumulative effects analyses are required to meet other regulatory or statutory requirements, such as the NEPA and the ESA. Within the ESA context, for example, the agencies recognize the need to consider the effects of multiple activities within a geographic area. When making effects determinations pursuant to the ESA, the agencies use analytical tools like the NMFS/FWS “Matrix of Pathways and Indicators” to assess the potential for cumulative effects of multiple management actions proposed concurrently within the same watershed. Such analyses are necessarily focused narrowly on project effects to listed salmonids, and are intended to

evaluate the potential for actions to result in adverse effects on or incidental take of listed species. These analyses are not intended to address all aquatic resources intended to benefit from the ACS.

Question #4: *How should ACS consistency determinations be made where watershed analysis is not required or has not been completed?*

The *ROD* requires decision makers to make findings of ACS compliance for all actions in all land allocations. Decision makers are directed to use the results of watershed analysis to make such findings. Watershed analysis is required only prior to evaluating how proposed management activities in Key Watersheds, roadless areas and Riparian Reserves meet ACS objectives. Watershed analysis is not a prerequisite for all projects or all land allocations.

In land allocations where watershed analysis is required, agencies recognize the mandate and benefit of applying watershed analysis results in making ACS consistency findings. The *ROD* specifies what information from watershed analysis is important in assessing ACS consistency; e.g., a description of existing conditions and the range of natural variability of important physical and biological components of the watershed.

In recognition of the importance of watershed analysis, the *ROD* acknowledges that “ultimately, watershed analyses should be conducted in all watersheds on federal lands as a basis for ecosystem planning and management.” (*ROD*, B-20) This is consistent with the current FS and BLM approach. Many ecosystem analyses at the watershed-scale have been completed for non-Key Watersheds and the results have been used in making ACS determinations.

Team Recommendation:

Where watershed analysis is not required, the action agencies must still provide information on existing watershed conditions and the range of natural variability of important aquatic ecosystem components necessary for making ACS consistency findings. Such information may be available from sources such as NEPA analysis documents, ESA biological assessments and biological opinions, river basin or other landscape-scale assessments, field inventories, etc. There may be situations where actions are proposed for land allocations where watershed analysis is not required by the *ROD* and where there are inadequate alternative sources of watershed information necessary for making ACS consistency determinations. In these circumstances, decision makers may not be able to comply with the *ROD* requirements for assessing whether the action is consistent with ACS objectives until the necessary watershed information is available. Decision makers may find that the most expeditious process for generating the necessary information to make ACS consistency determinations in some cases may be to complete watershed analysis, notwithstanding the fact that it is not required by the *ROD*.

ISSUE: The role of S&Gs that mitigate the effect of new road construction on aquatic resources.

The RIEC asked the REO to facilitate interagency agreement on an interpretation of the following four groups of questions that address NFP S&Gs for road construction.

Question 1: *Does the standard and guideline WR-3 prevent the agencies from considering or counting planned restoration project benefits (e.g., road decommissioning) as mitigation for new road construction impacts to aquatic habitat? Conversely, must each project that entails new road construction include mitigation measures to offset the marginal road impacts, or can the agencies rely on previous, ongoing, or planned [road] restoration projects to achieve the no net increase requirement from B-19 and C-7?*

This set of questions mixes two distinct issues: (1) *ROD* requirements for roads in Riparian Reserves to meet ACS objectives, and (2) the *ROD* requirement for no net increase in road density within Key Watersheds. These issues are addressed separately below.

The *ROD* S&G WR-3 (*ROD*, C-37) is under the heading “Watershed and Habitat Restoration” for actions in Riparian Reserve land allocations and states: “Do not use mitigation or planned restoration as a substitute for preventing habitat degradation.” This S&G applies more broadly than to roads and is intended to ensure that the agencies do not rely on watershed or habitat restoration projects to serve as mitigation to allow avoidable impacts from projects planned in Riparian Reserves that are otherwise consistent with the ACS. Further, relying on restoration activities as mitigation may wrongly assume that the benefit from restoration is as likely as the negative impact of the planned activity.

The *ROD* recognized that adverse effects could result from new road construction (both short-term impacts from road construction activities and long-term effects from road management and increased road density on the landscape), yet did not prevent roads from being constructed. Instead, the *ROD* provided detailed S&Gs for roads in Riparian Reserves with the intent of minimizing both construction impacts and longer-term landscape impacts from road management. In addition to prescribing best management practices for specific road activities (RF-2 through RF-6; *ROD*, C-32), the S&Gs for roads in Riparian Reserves also call for interagency cooperation (RF-1), completion of watershed analysis and geotechnical analyses (RF-2, RF-3), and the development of Transportation Management Plans to ensure that road management activities meet ACS objectives (RF-7).

The *ROD* S&G WR-3 ensures that none of these *ROD* requirements for minimizing the effects of new roads in Riparian Reserves would be obviated by watershed or habitat restoration projects that some might construe as mitigation for avoidable impacts from new roads in Riparian Reserves.

In addition to S&Gs for roads in Riparian Reserves, the *ROD* also addresses road construction and maintenance activities in LSRs (*ROD*, C-16), and road treatments as a component of watershed restoration (*ROD*, B-31). The use of watershed analysis is required to determine the influence of roads on ACS objectives in Riparian Reserves, and could also be used to identify road-related impacts to aquatic systems in other land allocations. Watershed analysis is required in Key Watersheds and all roadless areas prior to resource management, to change default Riparian Reserve widths in all watersheds, and is recommended in all other watersheds (*ROD*, B-30). Additionally, all actions in all land allocations must comply with the ACS objectives (*ROD*, B-10).

Regarding the second issue embodied in this set of questions, the S&G WR-3 does not establish additional requirements for reducing road density in Riparian Reserves. The *ROD* requirements pertaining to road density are found in the S&Gs for Key Watershed land use allocations (*ROD*, C-7) and state:

“Inside Roadless Areas - No new roads will be built in remaining unroaded portions of inventoried (RARE II) roadless areas.”

“Outside Roadless Areas - Reduce existing system and nonsystem road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds.”

Outside of Key Watersheds, there are no specific S&Gs addressing road density restrictions elsewhere in the NFP area.

It is incorrect to interpret the S&G WR-3 as establishing a different baseline from which to evaluate the net change in road miles in Key Watersheds. The effective date of the *ROD* is the temporal starting point for evaluating changes in road miles in Key Watersheds. All road decommissioning activities within Key Watersheds, regardless of how they were funded, count towards the net change calculation. Similarly, all new roads are considered in this accounting. A recent report by the Research and Monitoring Group used this approach to evaluate and report the net change in road miles within all 164 Key Watersheds since the *ROD* effective date (April 1, 1999 memorandum from the Research and Monitoring Group to the RIEC).

The timing for road decommissioning to count towards the no net increase requirements in Key Watersheds is addressed in Question #4.

It should be noted that the March 18, 1997 land and resource management plan biological opinion (pages 70-72) issued by NMFS expanded the requirements of the *ROD* to reduce the potential impacts of road construction to minimize the level of incidental take of listed salmon. The opinion recognized that high road densities are correlated with impaired aquatic system functions in all watersheds, and that *ROD* S&Gs may not be specific enough to prevent incidental take at the site scale. Accordingly, the incidental take statement established additional mitigation for site specific road impacts (timing and location of construction), as well as requiring no net increase in road impacts outside of Key Watersheds. These requirements to comply with the ESA should not be confused with interpretations of *ROD* S&Gs.

Question 2: *What is the appropriate analytic scale for applying the “no net increase” standard (e.g., 6th field watershed, Key Watershed, administrative unit, etc.)? What are the baseline road mileages within the appropriate analytic unit from which to assess the “no net increase” in roads requirement?*

As explicitly stated in the *ROD*, B-19 the scale at which the no net increase standard is applied is at the Key Watershed scale. Key Watersheds vary in size, but commonly correspond with the “5th field” watershed-scale (20-200 square miles). The baseline road mileage against which new road construction is compared is the mileage that existed on May 13, 1994, the effective date of the *ROD*.

Question 3: *What specific restoration actions or mitigation measures are necessary for “decommissioning” road segments in order to remove them from the baseline inventory? Can decommissioning “skid trails” offset new road construction when meeting the “no net increase” standard?*

There are no expressly stated definitions for road decommissioning in the *ROD*, however, it does state that “[r]oad closures with gates or barriers do not qualify as decommissioning or a reduction in road mileage” (*ROD*, B-19). The *ROD* directs the land management agencies to determine the influence of roads in Riparian Reserves on ACS objectives through watershed analysis and to obliterate roads based on ongoing and potential effects to ACS objectives (*ROD*, C-32, C-33). The FEMAT Report defines decommissioning as “closing and stabilizing a road to eliminate potential for storm damage and need for maintenance” (FEMAT V-57). NMFS’ March 18, 1997 plan-level biological opinion defines road decommissioning as whatever measures are “necessary to restore pre-road hydrologic functions and...minimize the risk of road-related sediment delivery to streams.”

All of these references make it clear that the intent is to evaluate and reduce road related *impacts* to meet ACS objectives. Because skid trails are not constructed to the same standards as roads and generally do not cause the same types of long-term hydrologic effects as roads, their obliteration cannot be used to offset construction of new roads to meet the no net increase standard.

Question 4: *In order to meet the intent of the ACS objectives and the referenced S&Gs, what is the temporal requirement for mitigating road construction effects? For example, can new roads be constructed in Key Watersheds now, when offsetting road decommissioning cannot occur until sometime in the future? Must offsetting road decommissioning occur prior to the construction of new roads or can they occur concurrently?*

The *ROD* is clear in its intent for Key Watersheds to be managed to reduce overall road¹ densities over time to restore impaired aquatic ecosystem functions and processes. The NMFS March 18 opinion extends this intent to all watersheds with listed salmon species to minimize incidental take. The *ROD*, B-19 states that if funding for implementing reductions in road mileage in Key Watersheds is insufficient, then there will be no net increase in road miles. Because existing conditions in many managed watersheds may already be degraded, road mileage reductions need to occur prior to, or concurrent with, new road construction. This timing is necessary to meet ACS objectives which strive to maintain or restore aquatic processes and functions that may be affected by new road construction.

Policies developed following the *ROD* support the requirement for road mileage reductions to occur prior to or concurrent with new road construction in Key Watersheds. However, the agencies also recognize that road decommissioning often entails significant environmental planning, analysis, and review requirements, and decommissioning activities may extend beyond the completion of the new roads in Key Watersheds. This is reflected in the previous interagency policy on road access under the NFP (April 7, 1995 Memorandum from the Regional Interagency Executive Committee) which requires at least one mile of federal road to be decommissioned "prior to, during, or within a reasonable timeframe following construction" of each mile of new road constructed in Key Watersheds. Similarly NMFS' March 18 opinion (page 72) states that the identification of mitigation actions (including those for road density) must occur concurrent with road construction, and must be implemented within a reasonable timeframe following construction of the new road.

The requirement to decommission roads prior to or concurrent with constructing new roads in Key Watersheds would also apply to semi-permanent roads that are in place for one or more operating period (construction season), but eventually removed at the completion of the timber sale or other management action. Even though such roads may be seasonally closed to traffic during the wet season, they may impair hydrologic functions, contribute sediment or cause other adverse effects for the time they are temporarily on the landscape, and therefore must have offsetting road decommissioning to meet the intent of the *ROD* requirements.

Based on this logic, only temporary roads; i.e., those that are constructed and completely obliterated during the same construction season, would not be subject to the requirement to decommission a like mileage of roads prior to or concurrent with the new road miles in Key Watersheds.

¹ Efforts to interpret and implement road-related provisions of the NFP *ROD* have highlighted the need for a consistent definition of roads, which presently does not exist. We recommend that the work group involved with this issue be re-convened to address it further. Several definitions currently in use are applicable to this clarification of the timing for road decommissioning:

✦ According to the final Forest Service Roads Analysis procedures (June 10, 1999), a road is a vehicle travel-way more than 50 inches wide.

✦ The NMFS March 18, 1997 plan-level biological opinion defines several types of roads based on length of activity: "temporary roads" are roads that are installed and decommissioned during the dry season of the same year (usually May 15-October 15); "semi-permanent roads"- are roads that are used for longer than one dry season, but are decommissioned at the end of the contract; "permanent roads" are roads that remain in use after a contract is completed.

✦ The team assumes that the term "open" means that a "road" is accessible to traffic; "closed" means that the road still exists, but is not accessible to traffic.

✦ The definition of road decommissioning is addressed in the response to question #3 above.

The interagency review team noted that much of the confusion that initially lead to questions #1 and #4 for the road issue stem from differences in the analytical baseline for the *ROD* and for ESA Section 7 consultation. As stated above, *ROD* requirements are met by ensuring that there is a gradual decline (or if funding is insufficient, no net increase) in road miles within Key Watersheds from the temporal baseline of the *ROD* effective date. For example, if 10 miles of roads were decommissioned in a Key Watershed in 1995 as part of a restoration project, the construction of 5 new miles of road in the same Key Watershed in 1996, and 3 additional miles in 1997 would technically be consistent with the *ROD* requirements, as long as the net effect is a reduction from the 1994 *ROD* baseline. In contrast, the Section 7 consultation regulations redefine the environmental baseline with each subsequent consultation, and all actions previously consulted upon are included in the environmental baseline for each new action. That is, when an action is identified for consultation in a biological assessment, all actions which have occurred prior to the consultation are accounted for in the analysis of the environmental baseline. Impacts of new activities are measured by their effect on the existing environmental baseline.

Some have erroneously mixed these two concepts of baseline and suggested that in order to meet the *ROD* requirements, each proposal for new road construction in Key Watersheds must be accompanied by a concurrent, equivalent amount of road decommissioning regardless of previous road mileage reductions, so that there is a net reduction in the pre-project road density (ESA definition of environmental baseline). This approach does not account for previous decommissioning actions, regardless of their timing or magnitude, and creates an institutional disincentive to proactively decommission roads prior to any action which may propose new road construction. This creates cost inefficiencies by piecemealing decommissioning projects, as well as postponing or forgoing larger-scale road restoration opportunities that would accelerate ecosystem recovery.

Team Recommendation:

The team identified a process that could provide an accounting procedure for tracking *ROD* compliance and ACS consistency and for addressing road-related impacts under Section 7. Since both the *ROD* and NMFS' March 18 plan-level biological opinion infer the need to systematically evaluate roads for their intended long-term use (and subsequent disposition), the Transportation Management Planning (TMP) process can provide an avenue for resolving this dilemma. Road management planning processes of both the FS and BLM, along with watershed analysis, can provide an analytic framework for setting road impact reduction objectives and can be used to establish both a spatial and temporal framework for road management within each 5th field watershed. The results of this process can be identified in each consultation, and tracked through the interagency restoration database, so that all actions, including past, present and foreseeable future can be evaluated in the ESA environmental baseline. So, as new roads are proposed as part of actions under consultation, potential impacts can be evaluated (or counted) against road impact reductions achieved through implementing the TMP.

This requires each TMP to include an assessment of past road impacts already addressed through restoration since the issuance of the *ROD*. The TMP establishes both long-term objectives for reducing road related impacts, and the restoration database provides an accounting process for all restoration actions. As new roads are proposed in a watershed, they will be evaluated against the TMP objectives. As long as new construction is consistent with the TMP, ACS, and is covered by previous or ongoing actions reducing road impacts, it would not degrade the environmental baseline at the time of consultation, and would be fully consistent with *ROD* requirements for managing road mileage in Key Watersheds.

ISSUE: **The role of Late-Successional Reserves and designated roadless areas as components of the ACS.**

The RIEC asked the REO to facilitate interagency agreement on what, if any, further clarification is needed to document the expected role of Late-Successional Reserves and inventoried roadless areas in meeting ACS objectives.

The interagency review team identified and answered a number of specific questions to provide the requested clarification:

Question 1: *Are LSRs an important component of the ACS?*

Yes, LSRs are an important component of the ACS (ROD, B-12).

Question 2: *Are LSR Assessments required to address ACS objectives?*

No, LSR Assessments, as described on ROD, C-11, are not required to address ACS objectives. ACS objectives are addressed in NEPA documents linked to watershed analysis as appropriate to the issues raised by the proposed activity and the situation.

Question 3: *Do different S&Gs apply to roadless areas inside and outside of Key Watersheds?*

Yes. While roadless areas both in and outside Key Watersheds have additional S&Gs designed to protect water quality because of identified concerns over unstable lands, the S&Gs are not the same. Watershed analysis is required prior to management activities in all watersheds that contain roadless areas. However, inside Key Watersheds, no new roads are to be built in remaining roadless areas (ROD, B-19).

Question 4: *What further points of clarification can be provided regarding the role of LSRs and roadless areas as components of the ACS?*

- The ACS objectives and aquatic S&Gs apply in LSRs.
- LSR Assessments, Watershed Analysis, NEPA, and other information must be used together to guide final management decisions in LSRs. LSR Assessments may contain recommendations that are not appropriate when viewed in the larger context of this additional information.
- Key Watersheds are intended to play an important role in the recovery of fish stocks listed under the ESA, and 38 percent of LSRs are in Key Watersheds.
- Roadless Area means all RARE II areas not roaded as of 5/13/94, regardless of release language, management direction, changes in roadless definition, etc.
- There is a correlation between roadless areas and at-risk fish stocks, and management decisions in roadless areas must consider those stocks. However, there are no specific restrictions on management activities in roadless areas other than watershed analysis and, inside Key Watersheds, the requirement that no new roads are to be built in remaining roadless areas.
- Maps of remaining roadless areas included in the FEMAT Report are likely adequate for plan-level consultation, and any changes to roadless areas between the FEMAT mapping and the signing of the ROD can be examined at the project level during individual ESA Section 7 consultations.

Team Recommendation:

The presence of roadless areas, LSRs, and status of known bull trout populations should be identified and addressed in watershed analysis documents. Analyses that do not include this information should be updated at the earliest opportunity.

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To: District Managers: Lakeview, Salem, Eugene, Roseburg, Medford, and Coos Bay

From: Deputy State Director for Resource Planning, Use and Protection

Subject: FY 2003 Timber Sale Strategy and Data Call

DD: 11/27/2002
01/15/2003

FY 2003 Timber Sale Strategy

Legal, administrative, and Northwest Forest Plan (NFP) implementation challenges are continuing into FY 2003. The primary challenges include: (1) resolution of Endangered Species Act (ESA) consultation issues associated with the Pacific Coast Federation of Fishermen's Associations et al. v. National Marine Fisheries Service lawsuits and Aquatic Conservation Strategy interpretation; (2) implementation of the Survey and Manage (S&M) Supplemental Environmental Impact Statement; and (3) the Ninth Circuit Court of Appeals ruling in Hugh Kern, et al. v. Bureau of Land Management regarding Port Orford Cedar and the spread of *Phytophthora lateralis*.

The nature of the situation dictates the development of a FY 2003 Timber Sale Plan that continues to place interim emphasis on partial cuts, i.e., sales for which either a "No Effect" (NE) or "Not Likely to Adversely Affect" (NLAA) biological determination can be made for listed anadromous fish, and timber sales that do not influence the spread of *Phytophthora lateralis* within the range of Port Orford cedar. This emphasis (a continuing interim strategy) is driven by circumstances in an attempt to effectively utilize appropriated funds and implement the Allowable Sale Quantity (ASQ) and socioeconomic objectives of the NFP to the maximum extent possible. It is anticipated that as the current challenges are resolved, the emphasis for balanced NFP implementation, i.e., partial cuts, regeneration cuts, restoration as a requirement of timber sale contracts, etc., will resume. However, if regeneration harvest sales can be designed to receive NLAA determinations, this should be pursued at levels consistent with the district

Resource Management Plan.

The following guidelines and assumptions shall also apply to district timber sale plans for FY 2003:

1. The following volumes are to be offered in support of Performance Measure accomplishment:

<u>District</u>	<u>FY03 Targets (MMBF)</u>
Lakeview	9
Salem	30
Eugene	29
Roseburg	15
Medford	52
Coos Bay	<u>15</u>
	150

2. Chargeable and nonchargeable volume will count towards the annual sale targets.
3. All needed Letters of Concurrence or Biological Opinions must be received prior to sale advertisement.
4. Districts are encouraged to accelerate the balanced implementation of the Resource Management Plans and NFP, utilizing timber sales as a treatment tool, where identified, as an appropriate treatment necessary to accomplish Aquatic Conservation Strategy and Late-Successional Reserve (LSR) objectives as identified in Watershed Analysis and LSR Assessments.
5. Until Annual Work Plan directives are issued, assume the funding levels in the FY 2003 Planning Target Allocations plus any carryover funds from FY 2002, and assume comparable 6310, 5810, and 5900 directives from FY 2002. In addition, employ the following excerpts from the 5810 and 5900 subactivity definitions from the fund coding handbook:
 - a. For 5810 – To qualify for the deposit of receipts: (1) the timber sale layout, volume measurement and appraisal, and contract preparation must be funded by the Pipeline Restoration Fund (PRF); and (2) a minimum of most (51 percent or more) of the timber sale preparation costs must be funded by the PRF.
 - b. For 5900 – A minimum of most (51 percent or more) of the treatment costs must be funded by the Forest Ecosystem Health and Recovery Fund (FEHRF) for the receipts to be deposited into the FEHRF.

All Districts are to complete the attached table (Table 6) and e-mail it to Lyndon Werner (OR-931) by close of business (COB), November 27, 2002. For each sale apply a hierarchy of

funding source, land use allocation, and cutting method to display the distinct acres and volume on a separate line. Then display the total acreage and volume figures for each sale.

Documentation of Timber Sale Preparation Effort

We have experienced four years (FYs 1999-2002) of offering less than the full ASQ. Concerns persist which prompt us to explain what we have been accomplishing with the funding that has been allocated from the lesser volume that has been offered. It is understood that, in some cases, it has been more costly than "normal" to prepare the sales that have been offered; in some cases sale preparation effort has resulted in nonviable sales. In an attempt to document sale preparation effort that has resulted in nonviable sales or sales that have been put on-the-shelf in various stages of completion, Table 5 has been developed. In addition, this data is useful in demonstrating progress in meeting the PRF goal of one year's lead time, i.e., one ASQ's worth of volume on the shelf.

All districts are to complete the attached table (Table 5) and e-mail it to Lyndon Werner (OR-931) by COB, January 15, 2003. Additional rows should be inserted into the table as needed. The population of sales still includes all unoffered sales intended for sale in FYs 1999-2002 and their status as of the end of FY 2002. Each individual sale should be displayed once only in the highest possible numbered gate.

Additional Table 5 Explanation:

1. Gates
 - a. Gate 1: Sale is ready for ID Team to begin their analysis and deliberations. Initial reconnaissance is complete.
 - b. Gate 2: S&M, Threatened and Endangered, cultural, etc., surveys; ID team; Environmental Assessment; and public review complete.
 - c. Gate 3: Layout and cruise complete. Sale is nearly ready to advertise, pending appraisal and final contract preparation.
 - d. Gate 4: ESA consultation complete.
2. Columns
 - a. Sale Name: Use most current name; use Remarks column to explain sale combinations.
 - b. Acreage and Volume: Use current figures as of the completion of the gate.
 - c. Viability Status: No-Off = Sale no longer viable; it is off the shelf. Yes-On = Sale viable but on-the-shelf at this gate; not appropriate to proceed at this time on work under next gate. Yes-Go = Sale viable; proceed with effort under next gate.
 - d. Remarks: Use for additional explanation or to cross reference a separate document with more detailed explanation.

Timber Sale Pipeline Fund Project Submissions

To credibly utilize PRF funds (5810) and develop the data necessary for the annual report to Congress, this Information Bulletin is requesting the closeout of FY 2002 project

accomplishments and submission of proposed FY 2003 projects. Refer to the FY 2002 Annual Work Plan Subactivity Specific Directives, pages 92-94, for additional information on project development.

All districts are to complete the attached Table 1 for all FY 2002 projects and e-mail them to Lyndon Werner (OR-931) by COB, November 27, 2002. All districts are to complete the attached Table 2 and e-mail them to Lyndon Werner (OR-931) three weeks following the issuance date of the FY 2003 Oregon/Washington Annual Work Plan Directives. All districts are to complete the attached Tables 3 and 4 and e-mail them to Lyndon Werner (OR-931) by COB, January 15, 2003. Specific feedback requirements are as follows:

1. Be specific regarding the units of accomplishment. The tables should be submitted (electronically) as a single document from each district. Insert additional rows into the tables as necessary to display additional accomplishments or projected timber sales.
2. Cruised and "on-the-shelf" volume is comprised of sales which were complete at the end of FY 2002 (Table 1) or are anticipated to be complete at the end of FY 2003 (Table 2). "Complete" is defined as cruised and on-the-shelf with the assumption that, at a certain designated time (in this case, at the end of FYs 2002 or 2003, respectively), all field work was complete.
3. **Table 1:**
 - a. The dollar figures (at the bottom of the table) for all projects must add up to the total amount spent by the district.
 - b. Use the same project names established or perpetuated in FY 2002. Use the remarks section to explain the "flow" (pathway) of a project from year to year. Use the remarks section to explain if preliminary project development effort has resulted in decreased or no projected accomplishment (less or no timber volume).
4. **Table 2:**
 - a. The dollar figures at the bottom of the table (for all projects) must add up to the district's tentative 5810 allocation plus anticipated carryover, unless that level of spending would be inconsistent with the directives. Identified project cost must be specific to that project's identified accomplishments.
 - b. Use the same project names established or perpetuated in FY 2002 unless a FY 2002 general project (i.e., stand exams) in a watershed is now becoming more than one FY 2003 specific project (i.e., with different project names). Use the remarks section to explain the "flow" of a project from year to year or the "flow" of a project into multiple projects.
5. **Tables 3 and 4:**

- a. Make a reasonable and conservative determination as to whether operations will proceed and generate revenue in FY 2003.
- b. The total projected revenue in FY 2003 from new sales in Table 3 (right most column) should equal the sum of the value of sale-by-sale revenue projections in Table 4.

If you have any questions, please contact Lyndon Werner (OR-931) at 503-808-6071 or Alan Wood (OR-931) at 503-808-6072.

Districts with Unions are reminded to notify their unions of this Information Bulletin and satisfy any bargaining obligations before implementation. Your servicing Human Resources Office or Labor Relations Specialist can provide you assistance in this matter.

Signed by
Denis M. Williamson
(Acting)

Authenticated by
Mary O'Leary
Management Assistant

5 Attachments

- 1 – Table 1: FY 2002 5810 Actual Accomplishments (1p)
- 2 – Table 2: FY 2003 5810 Proposed Projects (1p)
- 3 – Table 3 and Table 4: Planned FY 2003 Timber Sale Pipeline Restoration Work and Projected Revenue (1p)
- 4 – Table 5: On-the-Shelf/Unoffered Timber Sale Volume - end of FY 2002 (2pp)
- 5 – Table 6: FY 2003 Timber Sale Plan (1p)

Distribution

WO-230 (Room 204LS) - 1
OR-014 (Mel Crockett) - 1
OR-082 (Jeffrey Gordon) - 1
OR-090 (Dave DeMoss) - 1
OR-100 (Steven Niles) - 1
OR-110 (Dave D. Reed) - 1
OR-120 (Jon Menten) - 1

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2
3 SEP 30 1999

4 AT SEATTLE
5 CLERK U.S. DISTRICT COURT
6 WESTERN DISTRICT OF WASHINGTON
7 BY DEPUTY

8 UNITED STATES DISTRICT COURT
9 WESTERN DISTRICT OF WASHINGTON
10 AT SEATTLE

11 PACIFIC COAST FEDERATION OF
12 FISHERMEN'S ASSOCIATION;
13 INSTITUTE FOR FISHERIES
14 RESOURCES; OREGON NATURAL
15 RESOURCES COUNCIL; UMPQUA
16 WATERSHEDS, INC.; COAST RANGE
17 ASSOCIATION; and HEADWATERS,

18 Plaintiffs,

19 v.

20 NATIONAL MARINE FISHERIES
21 SERVICE,

22 Defendant,

23 and

24 DOUGLAS TIMBER OPERATORS, INC.
25 and NORTHWEST FORESTRY
26 ASSOCIATION,

Defendant-Intervenors.

NO. C99-67R

ORDER GRANTING PLAINTIFFS'
MOTION FOR SUMMARY JUDGMENT,
DENYING DEFENDANTS' MOTIONS
FOR SUMMARY JUDGMENT AND
DISMISSAL AND GRANTING
CROSS-MOTIONS TO STRIKE
IN PART

THIS MATTER comes before the court on the parties' cross-
motions for summary judgment, and cross-motions to strike evidence

110

1 filed in support of summary judgment, and defendant-intervenors'
2 motion for summary judgment and motion to dismiss.¹ The court has
3 considered the pleadings and documents filed in support of and in
4 opposition to the motions and the relevant administrative record.
5 Being fully advised, the court grants plaintiffs' motion for
6 summary judgment, denies defendants' motions for summary judgment
7 and to dismiss and grants the cross-motions to strike in part.
8

9 10 I. BACKGROUND²

11 Plaintiffs are six Oregon-based organizations representing
12 the interests of commercial fishermen and/or environmental causes.
13 They have sued the National Marine Fisheries Service (NMFS) under
14 the Endangered Species Act (ESA), 16 U.S.C. § 1536. The State of
15 Oregon, Douglas Timber Operators, Herbert Lumber and Superior
16

17 ¹Defendant-intervenors move to dismiss on the grounds that the
18 court lacks subject matter jurisdiction and that plaintiffs have
19 failed to join indispensable parties. The court rejected these
20 arguments in a previous suit between these parties, Pacific Coast
21 Federation of Fishermen's Associations, et al. v. National Marine
22 Fisheries Service, No. 97-775R (PCFFA I), and they are not repeated
23 here. Defendant-intervenors also move to dismiss on the ground
24 that the court lacks a complete administrative record. Defendant-
25 intervenors, however, have submitted the documents they contend are
26 necessary to complete the record by way of declaration.

23 ²The procedural and factual background of this controversy are
24 set out in the court's March 25, 1999, order granting plaintiffs'
25 motion for a preliminary injunction and in the court's May 29,
26 1998, amended order granting defendants' motion for summary
judgment in part. The court only recites here those facts
necessary to understand its holding.

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1 Lumber have joined the suit as defendant-intervenors.³ Plaintiffs
2 challenge four biological opinions issued by NMFS on the impacts
3 of 24 federal timber sales in the Umpqua River Basin on the Umpqua
4 cutthroat trout and the Oregon coastal coho salmon, fish species
5 that have been listed as threatened or endangered under the
6 Endangered Species Act. Plaintiffs ask the court to vacate the
7 four opinions.
8

9 In a previous suit between these parties, plaintiffs chal-
10 lenged a Programmatic Biological Opinion (BO)⁴ NMFS issued on March
11 18, 1997. In the Programmatic Biological Opinion, NMFS concluded
12 that the continued management of public land in the Umpqua River
13 Basin in Oregon under the United States Forest Service's (USFS)
14 existing Land and Resource Management Plans (LRMPs) and the Bureau
15 of Land Management's (BLM) existing Resource Management Plans
16 (RMPs) would not jeopardize the survival of the Umpqua cutthroat
17 trout. In that suit, plaintiffs contended that NMFS failed to use
18 the best available scientific information in reaching its "no
19 jeopardy" conclusion as required by the ESA, that it did not
20 consider enough evidence in reaching its "no jeopardy" conclusion,
21

22 ³In discussing the defendants' substantive arguments, the
23 court refers to the defendants collectively as "NMFS" unless
24 otherwise indicated.

25 ⁴The parties also refer to the Programmatic Biological Opinion
26 as the "Plan BO," "Northwest Forest Plan BO," or "NFP BO." For
consistency the court uses "Programmatic Biological Opinion."

1 that the conclusion conflicted with evidence before the action
2 agencies and that the Programmatic Biological Opinion authorized
3 site-specific actions without adequate consultation as required by
4 the ESA. Plaintiffs asked the court to invalidate the March 18,
5 1997 Programmatic Biological Opinion and order the government
6 defendants to reconsult on the continued implementation of USFS
7 and BLM's Umpqua River Basin management plans. Plaintiffs also
8 sought an order prohibiting USFS and BLM from "tiering to" (rely-
9 ing on) the Programmatic Biological Opinion to authorize any site-
10 specific projects or management actions that may affect the listed
11 fish. A central contention in that suit was whether NMFS had
12 ensured compliance with the Aquatic Conservation Strategy (ACS),
13 a component of the Northwest Forest Plan. The Northwest Forest
14 Plan adopted standards and guidelines for forest management within
15 the range of the northern spotted owl. The ACS addresses the
16 habitat needs of salmonids on federal lands within the range of
17 the northern spotted owl.
18

19 The court upheld the Programmatic Biological Opinion. And it
20 held that USFS and BLM could properly tier to the Programmatic
21 Biological Opinion in their respective management plans. The
22 court found that NMFS did not act arbitrarily or capriciously in
23 assuming that the USFS and BLM would implement the LRMPs and RMPs
24 in a manner consistent with the ACS. The court held, however,
25 that NMFS could not rationally reach a "no jeopardy" conclusion in
26

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1 reviewing the agencies' site-specific biological opinions without
2 analyzing whether the proposed projects did, in fact, comply with
3 the ACS. Thus, the court held that NMFS could properly assume on
4 the programmatic level that the agencies' proposed actions would
5 comply with the ACS, but found that it had failed to ensure or
6 verify ACS compliance on the site-specific or project level.

7 Following the court's decision in PCFFA I, the government
8 defendants consulted on 24 timber sales covered by the biological
9 opinions at issue in this litigation. In November and December
10 1998, NMFS issued four biological opinions concluding that the
11 proposed timber sales would not jeopardize coho or cutthroat
12 survival and recovery.⁵ AR 1 at 14, 1s-3s. In the instant suit,
13 plaintiffs challenge NMFS's new biological opinions. They contend
14 that the new opinions suffer from the same flaw in that they are
15 inadequate to ensure or verify the action agencies' compliance
16 with the ACS.

18 / / /

19 / / /

20 / / /

21 _____
22 ⁵Twelve of the timber sales at issue in PCFFA I are at issue
23 here because they were submitted for reconsultation following the
24 court's order: Little River DEMO, Final Curtain, Dream Weaver,
25 Buck Fever, Sweet Pea, Buck Creek Commercial Thin, E-mile, Red Top
26 Salvage II, Lower Conley, Foghorn Cleghorn Commercial Thin, Sugar
Pine Density Management and Diamond Back. The remaining timber
sales were proposed since the court's order and have, therefore,
not been reviewed by the court.

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1 II. DISCUSSION

2 A. Motions to strike

3 Both sides have filed extra-record evidence in the form of
4 declarations. Both sides move to strike the other sides' extra-
5 record evidence.⁶ Specifically, plaintiffs seek to strike portions
6 of Michael P. Tehan's declaration and all of Daniel R. Kenney's
7 declaration because they are either not proper extra-record sub-
8 missions or because they are impermissible expert opinions.
9 Defendant seeks to strike Christopher Frissell and Mark Powell's
10 declarations on the same basis.
11

12 Extra-record evidence is admissible to show the agency has
13 not considered all relevant factors and to explain technical
14 matters:

15 If the reviewing court finds it necessary to go outside
16 the administrative record, it should consider evidence
17 relative to the substantive merits of the agency action
18 only for background information, . . . or for the lim-
19 ited purposes of ascertaining whether the agency consid-
20 ered all the relevant factors or fully explicated its
21 course of conduct or grounds of decision . . . Consider-
22 ation of the evidence to determine the correctness or
23 wisdom of the agency's decision is not permitted, even
24 if the court has also examined the administrative re-
25 cord.

21 ASARCO, Inc. v. United States Env'tl Protection Agency, 616 F.2d
22 1153, 1158 (9th Cir. 1980). The court will consider the challenged
23

24 ⁶Plaintiffs move, in the alternative, for leave to file a
25 surreply brief on the summary judgment motions. The court finds
26 that the summary judgment motions have been adequately briefed and
the motion is denied on that basis.

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1 evidence only for background information and hereby grants the
2 cross-motions to strike to the extent the challenged declarations
3 contain opinion evidence or evidence pertaining to the correctness
4 of the challenged agency action.

5 B. Summary judgment motions

6 1. Standard of review

7
8 Summary judgment is appropriate where there is no genuine
9 issue of material fact and the moving party is entitled to judg-
10 ment as a matter of law. Fed. R. Civ. P. 56. A biological opin-
11 ion is a final agency action that may be set aside under the
12 Administrative Procedure Act⁷ if the court finds it is "arbitrary,
13 capricious, an abuse of discretion, or not otherwise in accordance
14 with law." Bennett v. Spear, 520 U.S. 154, 174 (1997). A bio-
15 logical opinion is arbitrary and capricious if the agency has
16 "entirely failed to consider an important aspect of the problem,
17 offered an explanation for its decision that runs counter to the
18 evidence before the agency, or is so implausible that it could not
19 be ascribed to a difference in view or the product of agency
20 expertise." Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto.
21 Ins. Co., 463 U.S. 29, 43 (1983). A biological opinion is also
22 invalid if it does not employ the best available scientific infor-
23 mation as required by 16 U.S.C. § 1536(a)(2). Greenpeace Action

25
26 ⁷5 U.S.C. § 706(2) (A).

1 v. Franklin, 14 F.3d 1324 (9th Cir. 1992).

2 2. ACS consultation procedure

3 The ACS has nine stated objectives aimed at maintaining or
4 restoring the salmonid's aquatic habitat. The objectives provide
5 a framework for managing aquatic ecosystems. The objectives
6 describe the attributes and distribution of aquatic ecosystems
7 believed necessary to provide conditions for maintaining currently
8 strong populations of fish and other aquatic and riparian depend-
9 ent organisms and to allow for recovery of currently degraded
10 ecosystems. See Reeves Decl. at 5, ¶ 9. The ACS has four
11 essential features designed to accomplish the nine objectives:
12 1) establish riparian reserves (an allocation of land associated
13 with riparian areas with special standards and guidelines that
14 restrict management activities in those areas); 2) designate key
15 watersheds (watersheds important to the at-risk fish stocks);
16 3) utilize watershed analysis procedures for evaluating biologic
17 processes in specific watersheds; and 4) provide for watershed
18 restoration. AR 21 at B-9.

19
20 As part of the Northwest Forest Plan consultation, the Pro-
21 grammatic Biological Opinion endorsed a streamlined consultation
22 process. Under the streamlined consultation process, interagency
23 teams meet to evaluate specific forest management activities.
24 When USFS or BLM proposes to take an action that may affect a
25 threatened or endangered species covered by the Programmatic
26

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1 Biological Opinion, a "Level 1" team (an interagency team that
2 includes a NMFS biologist), conducts an analysis to determine
3 whether the project is likely to adversely affect the species.
4 The Level 1 team records information regarding a specific project
5 using a "matrix of pathways and indicators" set forth in the
6 Programmatic Biological Opinion and a checklist.

7
8 If the Level 1 team cannot reach unanimous agreement on a
9 project's impacts and consistency with the ACS, the action is
10 elevated to the Level 2 team, an interagency team of scientific
11 professionals. The project can also be elevated to the Level 3
12 team to resolve differences. Once there is consensus on project
13 effects and consistency with the ACS, the project is forwarded to
14 NMFS for formal consultation if necessary. With the exception of
15 the proposed Little River DEMO sale, which was the subject of the
16 court's preliminary injunction, none of the other timber sales at
17 issue in this litigation was elevated by the Level 1 team.

18 The matrix and checklists reflect information needed to
19 implement and attain the ACS objectives. It is divided into
20 "pathways," which indicate water quality, habitat access, habitat
21 elements, flow/hydrology, channel conditions and dynamics and
22 watershed conditions. The pathways are broken down into "indica-
23 tors" addressing specific components of each habitat characteris-
24 tic. The matrix provides three possible characterizations of the
25 existing condition of each habitat indicator that correspond to
26

1 a statement about the habitat condition: 1) poorly functioning,
2 2) at risk or 3) not properly functioning. For each habitat
3 indicator, the checklist provides columns corresponding to the
4 three characterizations. It also provides columns to indicate
5 whether the proposed action will restore, maintain, or degrade
6 the habitat condition for each indicator.

7 3. ACS compliance

8
9 In the earlier suit, there was evidence in the record, as
10 evidenced by the matrixes and checklists for the proposed sales,
11 that the proposed sales would degrade the habitat conditions at
12 the project or site-specific level. Many of the checklists, for
13 example, documented poorly functioning or at-risk habitat condi-
14 tions. Following the court's decision, the action agencies re-
15 initiated consultation for twelve of the sales at issue in PCFFA I⁸
16 in order to document ACS compliance and implementation and initi-
17 ated consultation for the other sales before the court. Plain-
18 tiffs contend that during the reconsultation process, the agencies
19 refocused their criteria for assessing ACS compliance in a manner
20 that gave the appearance that ACS compliance was being achieved,
21 rather than engaging in a meaningful analysis of ACS compliance
22 at the project scale. By refocusing their criteria, plaintiffs
23 argue, the action agencies masked or ignored evidence that the
24

25
26 ⁸See note 5, supra.

1 proposed timber sales would not "maintain or restore" habitat
2 conditions, as mandated by the ACS.

3 Plaintiffs advance a number of arguments: First, that NMFS
4 backed away from ensuring ACS consistency at the project level and
5 instead directed that ACS consistency and jeopardy be determined
6 at the 5th field⁹ watershed, which can span 20-200 square miles.
7 Second, that few if any timber sales will produce measurable
8 impacts on such a large scale. Third, that by determining ACS
9 consistency on a 10-20 year frame, the agencies ignored the sales'
10 near-term impacts on fish survival and recovery. Fourth, that
11 the agencies ignored conditions on non-federal lands in assessing
12 the cumulative watershed effects of additional logging. Fifth,
13 that the agencies ignored watershed analysis and riparian reserve
14 violations.¹⁰

15
16 In PCFFA I, the court held that NMFS could properly assume
17 in the Programmatic Biological Opinion that the action agencies'
18 implementation of the ten LRMPs and RMPs at issue in a manner

19
20 ⁹Aquatic ecosystems are described as fields. The size of
21 watershed determines its category. Fifth field ranges from 20-200
22 square miles and are referred to as watersheds. Sixth field ranges
from 2-50 square miles and are referred to as subwatersheds.
Reeves Decl. at 3, ¶ 5, n. 1.

23 ¹⁰Plaintiffs also make several arguments that appear to
24 overlap with issues already raised and ruled on in PCFFA I. To the
25 extent plaintiffs seek to challenge elements of the Programmatic
26 Biological Opinion that the court upheld, such as NMFS's reliance
on FEMAT's habitat-based analysis, the court will not address those
arguments.

1 consistent with the ACS would not likely jeopardize the continued
2 existence of the Umpqua cutthroat trout. PCFFA I at 24. At issue
3 here is whether NMFS adequately evaluated the action agencies'
4 compliance with the ACS in reaching its "no jeopardy" conclusion.

5 a. Project scale degradation and short term impacts

6 i. scale of ACS measurement

7
8 It is undisputed that the proposed timber sales before the
9 court will result in some site-specific degradation: NMFS's four
10 biological opinions issued in November and December 1998 document
11 degrading effects at the subwatershed scale on sediment, flows,
12 substrate, disturbance history, pool quality, large woody debris,
13 and riparian reserves. In evaluating the actions for ACS compli-
14 ance, NMFS concluded that only actions that would adversely affect
15 the environmental baseline over an entire watershed over a long
16 period would be inconsistent with ACS objectives. AR 1s at 10-13;
17 see also AR 1 at 11-13; AR 2s at 12-16; AR 3s at 14-21. Under
18 this analysis, which looks at the long term net effect of all
19 management actions at the watershed scale, NMFS concluded that
20 although the proposed timber sales would cause degradation at the
21 site level, they were not inconsistent with the ACS because the
22 effects were short term and localized.

23
24 Plaintiffs challenge NMFS's long term/watershed scale ap-
25 proach. At the outset, they argue, NMFS's approach is entirely
26

1 new and they suggest it was designed in response to the court's
2 earlier summary judgment order. Substantively, they contend that
3 focusing on so large a landscape masks each sales' impacts. They
4 also argue that by focusing on the watershed level, NMFS has
5 ensured that no project will ever result in a jeopardy finding
6 because few if any projects will create sufficient degradation at
7 the watershed level to be deemed inconsistent with the ACS. They
8 argue that ACS consistency and implementation must be determined
9 and measured at the site-specific or project level.

11 NMFS argues that determining ACS compliance on the watershed
12 scale is proper. It argues that ACS compliance was never intended
13 to be measured at the project scale. Rather, it is intended to
14 measure cumulative degradation across the watershed. Under NMFS's
15 approach, there would be no ACS violation until the culminated
16 degradation caused by individual projects is measurable at the
17 watershed level. NMFS argues that plaintiffs' project level
18 approach wrongly equates evidence of project level degradation
19 recorded in the matrixes and checklists with ACS noncompliance.
20 This approach, it contends, has no support in the Northwest Forest
21 Plan, the ACS, the Programmatic Biological Opinion, the scientific
22 evidence or elsewhere. NMFS also challenges plaintiffs' assertion
23 that it has employed an entirely new approach following PCEFA I.¹¹
24

25 ¹¹NMFS does not, however, cite to documentation in the PCEFA I
26 record that it employed a long term/watershed approach before the

NMFS maintains that it is clear that the watershed scale is the appropriate scale for making consistency findings. In support of this interpretation it cites to the Northwest Forest Plan which states:

The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands The approach seeks to prevent further degradations and restore habitat over broad landscapes as opposed to individual projects or small watersheds.

AR 16, p. B-9. NMFS argues that the focus on the "ecological health of watersheds" and prevention of further degradations "over broad landscapes" demonstrates that the proper emphasis in ACS compliance is the watershed scale. This argument is misplaced. NMFS is correct that the ACS seeks to prevent degradation at the landscape level. The section of the Northwest Forest Plan quoted above, however, merely states that it is no longer appropriate to evaluate ecosystem degradation and restoration on a project by project basis. Rather, it reflects a new approach adopted in the Northwest Forest Plan, which requires the government defendants to consider the health of aquatic habitats over entire watersheds. NMFS' reliance on this mandate, thus, begs the question of what level it is supposed to measure or verify ACS compliance to adequately protect the watershed.

The FEMAT report, which the court, at least implicitly, held

court issued that opinion.

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1 in PCFFA I represents the best scientific information, is the
2 scientific underpinning of the ACS. AR 15a. In its report, FEMAT
3 stressed (and indeed this court held in its prior decision) that
4 the ACS strategy must be implemented at all four spatial scales:
5 regional, province (river basin), watershed, and site (or pro-
6 ject). The Programmatic Biological Opinion, in reliance on FEMAT,
7 also requires ACS compliance at these four spatial scales. Thus,
8 not only must the ACS objectives be met at the watershed scale (as
9 NMFS argues), each project must also be consistent with ACS objec-
10 tives, i.e. it must maintain the existing condition or move it
11 within the range of natural variability.¹²

13 Notwithstanding the fact that ACS compliance is required at
14 all four spatial scales, NMFS is correct that the Programmatic
15 Biological Opinion does anticipate some harmful activities under
16 the Northwest Forest Plan. BO at 26. NMFS is also correct that
17 evidence in the checklists and matrixes that a project will result
18 in some degradation does not, standing alone, constitute ACS
19 noncompliance. NMFS, however, provides no basis for its shift to
20 a broad watershed scale of analysis and away from the multi-scale
21 approach contained in the Programmatic Biological Opinion.

23 ¹²The "range of variability" at the watershed or subwatershed
24 scale is the distribution of conditions of smaller subwatersheds
25 that support acceptable populations of anadromous salmonids and
26 other aquatic and riparian dependent organisms. Reeves Decl. at
8, ¶ 15.

1 ii. short term effects

2 On reconsultation, the action agencies considered degradation
3 over the long term (at least a decade). See, e.g. AR 1s at 10.
4 Each biological opinion concludes that recorded degradation is
5 inconsequential across the 5th field watershed over the long term.
6 NMFS argues that a long term approach is fully consistent with the
7 Programmatic Biological Opinion and should be upheld. It also
8 argues (somewhat inconsistently) that it evaluates short term
9 effects as well and the potential for these effects to cause
10 jeopardy in the short term.
11

12 The Programmatic Biological Opinion mandates that "management
13 actions that do not maintain the existing condition or lead to
14 improved conditions in the long term would not 'meet' the intent
15 of the Aquatic Conservation Strategy and, thus, should not be
16 implemented." AR 14 at 39. The Programmatic Plan Biological
17 Opinion also recognizes that individual projects can be consistent
18 with the ACS "[n]otwithstanding the potential for minor, short
19 term adverse effects." AR 14 at 39.
20

21 NMFS's stated reason for choosing a ten year time frame to
22 assess ACS compliance is that ten years "is the minimum period
23 stated when recovery would be seen" AR 58 at 2; AR 59 at
24 2. The plaintiffs complain that this ten year assessment is
25 faulty because it relies too heavily on passive restoration (i.e.
26

1 tree regrowth) and assumes that if more portions of the watershed
2 cross the ten year regrowth threshold than are being cut, the
3 logging will not have long term impacts. Plaintiffs argue that
4 NMFS ignored short term impacts even where the watershed analysis
5 stressed the need to avoid short term degradation. And, they
6 argue, by looking so far ahead to determine when clearcut forests
7 will be fully recovered, the agencies are essentially assuming
8 away the sales' adverse hydrologic effects.

9
10 The court agrees with plaintiffs that NMFS has failed to
11 adequately assess the short term impacts of the timber sales and
12 that it has failed to adequately explain its assumption that
13 passive restoration will adequately mitigate the adverse impacts
14 of logging. The problem with NMFS's approach, as plaintiffs point
15 out, is that NMFS is analyzing the sales' effects based on pre-
16 dicted conditions ten years after the sale. Because more trees
17 are predicted to grow back over ten years than are being cut in
18 the sale, every sale under consultation could ultimately result in
19 a "no jeopardy" analysis. The court further finds that in order
20 to fully ensure the action agencies' compliance with the ACS, NMFS
21 would have to assess the conditions immediately after the sale
22 instead of relying on tree regrowth as passive mitigation to com-
23 pensate for the logging. The court concludes that its failure to
24 do so was arbitrary and capricious.

25 / / /
26

ORDER

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1 b. Private land conditions

2 In the Roseburg BLM district, where most of the proposed sale
3 sites are located, there is a checkerboard pattern of federal and
4 non-federal land ownership. Plaintiffs contend NMFS ignored the
5 conditions on non-federal lands in making its "no jeopardy" deter-
6 mination.

7 It is undisputed that conditions on non-federal lands in the
8 range of the Umpqua cutthroat trout have contributed significantly
9 to the degradation of the specie's habitat:
10

11 Within the range of the UR cutthroat trout (the Umpqua
12 River Basin), approximately 47% of the land is Federally
13 managed. The remaining 53% is made up of private,
14 county, and State land consisting primarily of agricul-
15 tural and forest land. Historically, agriculture, live-
16 stock grazing, forestry and other activities on non-
17 Federal land in the Umpqua River Basin have contributed
18 substantially to temperature and sediment problems in
19 the Umpqua River Basin. Conditions on and activities
20 within the non-Federal riparian areas along stream
21 reaches downstream of the USFS and BLM land presently
22 exert a greater influence on river temperatures and
23 probably contribute more sediment to the habitat of
24 UR cutthroat trout and other Pacific salmonids in the
25 Umpqua River Basin than USFS and BLM land.

19 Programmatic Biological Opinion, AR 14 at 41. In PCFFA I, plain-
20 tiffs challenged the Programmatic Biological Opinion on the ground
21 that it did not take into account activity on non-federal land.

22 The court rejected this argument, finding it "clear from the
23 record that NMFS did consider the effects of the activities on
24 non-federal lands in reaching its "no jeopardy" conclusion."

25 PCFFA I at 22. The court declines to address this issue further
26

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1 since it was resolved in the earlier litigation.

2 c. Watershed analysis violations

3 Under the Northwest Forest Plan, USFS and BLM are directed to
4 use the results of watershed analysis to determine whether each
5 project is consistent with the ACS objectives. The finding must
6 include a description of the existing condition, a description of
7 the range of natural variability of the important physical and
8 biological components of a given watershed, and how the proposed
9 project or management action maintains the existing condition or
10 moves it within the range of natural variability. Plaintiffs
11 contend that although the agencies drew some information from the
12 watershed analysis in the site-specific consultations, they did
13 not incorporate the watershed analysis recommendations or desired
14 future conditions in the ACS consistency determination. NMFS
15 contends that the site-specific biological opinions before the
16 court adhere to the findings and recommendations in the watershed
17 analysis relevant to the particular project.

18
19 As examples of the action agencies' failure to adhere to the
20 watershed analysis, plaintiffs point to the Little River Watershed
21 Analysis, which identifies the Upper Little River as a high prior-
22 ity for restoration and protection. AR 17 at Recs-14, 16-17. The
23 Little River Demo sale,¹³ they argue, collides with these recom-
24

25 ¹³This is the sale the court preliminarily enjoined on March
26 25, 1999.

1 mendations by allowing logging in riparian reserves in the Willow
2 Flats area and Upper Little River drainage. They contend, and
3 NMFS does not persuasively dispute, that the biological opinion
4 does not mention the watershed analysis recommendations or provide
5 any rationale for concluding that the sale is consistent with ACS
6 objectives. NMFS argues instead that to the extent there is a
7 conflict between recommendations, the DEMO project is permissible
8 because it "clearly falls within the research exception to harvest
9 in riparian reserves because no significant risk to watershed
10 values or to ACS objectives exists."¹⁴ The court, however, re-
11 jected the argument that the sale clearly fell within the research
12 exception in ruling on plaintiffs' preliminary injunction motion.
13

14 In response to plaintiffs' criticisms of other projects'
15 failure to adhere to the relevant watershed analysis or recommen-
16 dations (e.g. the E-mile timber sale's failure to mention slope
17 stability and the Upper South Myrtle Harvest Plan's failure to
18 adhere to watershed analysis), NMFS offers the somewhat conclusory
19 (and circular) response that there is no evidence that any of the
20 projects criticized by plaintiffs will jeopardize the continued
21 existence of the listed species.
22

23 The court finds that in the challenged biological opinions,
24 NMFS failed to use watershed analysis to determine whether the
25

26 ¹⁴Defendant's memorandum in support of summary judgment at 25.

1 watersheds at issue are within the acceptable range of vari-
2 ability. There is no discussion of the watershed analyses' de-
3 scriptions of desired future conditions or incorporation of the
4 watershed analyses recommendations to attain those conditions.
5 For these reasons, the court finds that NMFS has not fully or
6 sufficiently incorporated watershed recommendations into its ACS
7 analysis.

8 d. Riparian reserve violations

9 The ACS standards prohibit logging in riparian reserves with
10 narrow exceptions for salvage logging and thinning where needed to
11 accelerate the development of mature forests in riparian areas or
12 to otherwise attain the ACS objectives. Plaintiffs contend that
13 in the second round of timber sale consultations, NMFS has not
14 insisted on strict compliance with the Northwest Forest Plan's
15 riparian reserve standards, despite its heavy reliance on invio-
16 late reserves to mitigate the sales' degrading effects. The
17 Little River Demo sale, for example, would log designated riparian
18 reserves. The applicable biological opinion, however, states that
19 the sale falls within a research exception. The court rejected
20 this research exception rationale when it granted plaintiffs'
21 motion for a preliminary injunction.

22 Similarly, Sugar Pine Density Management will log a 35-40
23 foot radius around designated sugar pines in a Tier 1 Key Water-
24 shed, and in riparian reserves. NMFS acknowledged in the biologi-
25
26

ORDER

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1 cal opinion that it was unclear whether this logging would promote
2 attainment of any ACS objectives or meet an exception for timber-
3 ing in a riparian reserve. AR 3s 12. NMFS found that the Sugar
4 Pine action was justified in order to increase the survival of
5 individual sugar pines. In the Red Top Salvage II action BLM
6 proposes to salvage approximately 132 acres of blown-down timber.
7 Twenty-three of those acres are in a riparian reserve. NMFS found
8 the action justified to reduce the potential for insect infesta-
9 tion and to reduce fuel loads and the associated risk of cata-
10 strophic fire. NMFS has also approved several sales that will log
11 in riparian reserves as part of commercial thins or salvage log-
12 ging, including three sales in Key Watersheds. Plaintiffs contend
13 that many of these sales have riparian buffers as small as 20
14 feet.¹⁵

16 NMFS acknowledges that logging in riparian reserves violates
17 the ACS standards unless it will accelerate the development of
18 mature forests or otherwise attain the ACS objectives. AR 3s at
19 2. In nearly identical language for each sale in a riparian
20 reserve, the biological opinions state that the thinning will have
21 beneficial effects on the rate of tree growth and riparian reserve
22 recovery, even though there is evidence in the record to the
23

24 ¹⁵NMFS contends that plaintiffs do not offer a citation to the
25 record to support this figure. This is incorrect. In the site-
26 specific biological opinions some sales have proposed "no-cut
buffers" of as little as 20 feet. See AR 1s at 3.

1 contrary. See AR 1s at 9; AR 3s at 12-14.¹⁶

2 Logging in riparian reserves is prohibited for salvage sales
3 unless "watershed analysis determines that present and future
4 coarse woody debris needs are met and other ACS objectives are not
5 adversely affected." Northwest Forest Plan Standard TM-1. The
6 problem with NMFS's explanation for allowing violations of ACS
7 riparian reserve standards is that it has no real relation to the
8 sales' aquatic impacts. It is approving projects that serve some
9 non-aquatic function (i.e. reduction of insect infestation) in
10 violation of ACS riparian standards although there is nothing in
11 the record that demonstrates that those projects have an aquatic
12 benefit. The court finds that, at a minimum, NMFS must require
13 some relation between the benefits used to justify projects in
14 riparian reserves and an aquatic function. By permitting viola-
15 tions of ACS riparian reserve standards where there is no evidence
16 of a rational connection between the proposed action and the
17 attainment of ACS objectives, NMFS acted arbitrarily and capri-
18 ciously.

19
20 / / /

21 / / /

22
23 ¹⁶The Red Top II biological opinion, for example, notes that
24 the watershed analysis found that large woody debris is not well-
25 distributed or abundant in this area, that the subwatersheds where
26 the logging will occur are not properly functioning for large woody
debris, and that the sale violates the riparian reserve logging
standard. AR 3s at 11.

ORDER

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1 4. Conclusion re: ACS compliance

2 The court finds that NMFS is required by the Northwest Forest
3 Plan and the Programmatic Biological Opinion to ensure ACS compli-
4 ance at all four spatial scales. Its decision to measure ACS
5 compliance only at the watershed level and its failure to evaluate
6 ACS compliance at the project or site level, therefore, was arbi-
7 trary and capricious. The court further concludes that NMFS could
8 not rationally conclude, based on the evidence before it, that
9 evaluating only long term impacts of agency activities satisfied
10 its mandate to ensure ACS compliance. Its failure, therefore, to
11 evaluate the short term impacts, (i.e. impacts that would manifest
12 in less than a ten year period) was also arbitrary and capricious.
13 Finally, the court finds that NMFS has not fully incorporated
14 watershed recommendations into its ACS analysis. Its failure to
15 do so was arbitrary and capricious in light of the fact that the
16 watershed analysis undoubtedly represents the best available
17 scientific information available.
18

19 By employing a long term/watershed approach in making jeop-
20 ardy determinations, NMFS has virtually guaranteed that no timber
21 sale will ever be found to jeopardize the continued existence of
22 the Oregon coastal coho or Umpqua River cutthroat trout. By
23 failing to require the action agencies to rely on and adequately
24 incorporate watershed analysis into their biological opinions,
25 NMFS has allowed the agencies to ignore the best scientific infor-
26

ORDER

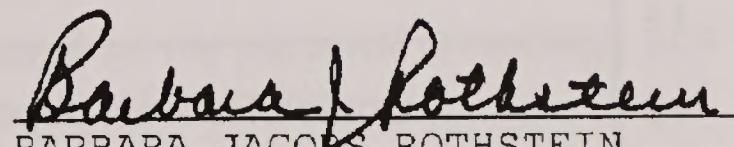
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1 mation available. In light of the overwhelming evidence of the
2 ongoing degradation to the habitat of the endangered aquatic
3 species in the Umqua River Basin, the court finds that NMFS's
4 approach is not rationally calculated to achieve the goals of the
5 ACS. The court, therefore, finds that NMFS acted arbitrarily and
6 capriciously in approving biological opinions that run counter to
7 the evidence before it¹⁷ and that fail to employ the best available
8 scientific information as required by 16 U.S.C. § 1536(a)(2).¹⁸
9

10
11 III. CONCLUSION

12 The court GRANTS plaintiffs' motion for summary judgment
13 [docket 60-1]; DENIES defendants' motions for summary judgment and
14 dismissal [docket 77-1, 81-1]; GRANTS the parties' cross-motions
15 to strike [docket 88-1, 97-1]; and DISMISSES this action.

16 DATED at Seattle, Washington this 29th day of September, 1999.

17
18 
19 BARBARA JACOBS ROTHSTEIN
UNITED STATES DISTRICT JUDGE
20
21
22
23

24
25 ¹⁷See Bennett v. Spear, 520 U.S. 154.

26 ¹⁸See Greenpeace Action v. Franklin, 14 F.3d 1324.

THE HONORABLE BARBARA J. ROTHSTEIN

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

PACIFIC COAST FEDERATION OF
FISHERMEN'S ASSOCIATION;
INSTITUTE FOR FISHERIES
RESOURCES; OREGON NATURAL
RESOURCES COUNCIL; UMPQUA
WATERSHEDS, INC.; COAST RANGE
ASSOCIATION; and HEADWATERS,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES
SERVICE,

Defendant.

Civil No. C 99-0067 R

DECLARATION OF
GORDON REEVES, Ph.D.

I, Gordon Reeves, depose and say:

1. I am a fish and aquatic ecologist with expertise in the assessment of the impact of human activities and natural processes on aquatic ecosystems and the associated biota. I also have expertise in natural resource management, watershed restoration, and conservation biology of anadromous salmonids. I have a degree in Biology from the State University of New York, College at Oswego, a M.Sc. in fisheries science from Humboldt State University, and a Ph.D. in fisheries science from Oregon State University. I am currently a research fish biologist with the USDA

1 Forest Service, Pacific Northwest Research Station, Corvallis, OR. I have been
2 employed in that capacity since 1985. A copy of my curriculum vitae is attached as
3 Exhibit 1.

4 2. I have conducted extensive field research in watersheds on federal lands
5 throughout western Oregon and southeast Alaska. I have published numerous
6 peer-reviewed articles and book chapters on the ecology of anadromous salmonids,
7 the impact of human activities and natural processes on their freshwater habitats,
8 and watershed restorations. I was a member of the Panel on Late Successional
9 Forests commissioned by the U.S. House of Representatives (a.k.a. The Gang of
10 Four), the team that developed the PacFish recommendations for riparian areas on
11 federal lands in the Pacific Northwest, Idaho, and Alaska, the Scientific Assessment
12 Team (SAT), and co-leader of the Aquatic Team of the Forest Ecosystem
13 Management Assessment Team (FEMAT) that developed the Aquatic Conservation
14 Strategy (ACS) that was adopted as part of the Northwest Forest Plan (NWFP). I
15 also assisted with the aquatic component of the Tongass Land Management Plan
16 revision for southeast Alaska and the Interior Columbia Basin Assessment.

17 3. I have reviewed the brief of the Plaintiffs and the declaration of Dr. C.
18 Frissell. I make the following statements based on my personal knowledge and
19 experience.

20 The Aquatic Conservation Strategy - Components

21 4. The ACS articulated by the FEMAT (Exhibit 2; AR 15a) was designed to
22 maintain currently properly functioning aquatic ecosystems and to restore degraded
23 ecosystems. The ACS was designed to provide a scientific basis for protecting
24 aquatic ecosystems and planning for sustainable resource management. It was
25 based on strategies developed previously in the "Gang of Four", PacFish, and SAT.
26

1 The ACS was more comprehensive than these earlier strategies. In the short term
2 (i.e., 10-20 years), the ACS was designed to afford protection to watersheds that
3 currently had good habitat and fish populations. The long-term goal (i.e., 100+
4 years) was to develop watersheds that functioned properly ecologically and
5 supported acceptable populations of fish and other aquatic and riparian dependent
6 organisms across the region covered by NWFP.

7 5. The ACS has four major components: (1) key watersheds; (2) riparian
8 reserves; (3) watershed analysis; and (4) watershed restoration. Each has a specific
9 purpose. Key watersheds (V-46) were watersheds (5th to larger 6th field)¹ that either
10 were: (1) considered to be ecologically intact and had favorable habitat for fish
11 populations and other aquatic and riparian dependent organisms, or (2) were
12 currently in a degraded states but were judged to have the greatest potential in the
13 short term to be restored with an active watershed restoration program. These
14 watersheds were distributed throughout the area covered by the NWFP. Key
15 watersheds that were ecologically intact were assumed to have the best remaining
16 fish habitats and populations and their protection was the short-term focus of the
17 ACS. Populations in these watersheds would presumably provide sources of
18 individuals to recolonize degraded watersheds as they recovered. Key watersheds
19 that are currently degraded had less productive habitat for fish. Ecological
20 processes that create and maintain habitat over time are altered in these systems.
21 It was believed that these watersheds would recover relatively quickly under a

23 ¹ FEMAT specified that aquatic ecosystems were of third to fifth order (Exhibit 2, V-
24 13; AR 15a), and described the attributes of such systems. Since then, aquatic
25 ecosystems are described as fields. The size of the watershed determinates the category.
26 Third to fifth order watershed are now classified as fifth or sixth field depending on size.
Fifth field ranges from 20-200 square miles and are referred to as watersheds. (Id.,
Appendix V-I) Sixth field ranges from 2-50 square miles and are referred to as
subwatersheds.

1 restoration focus and provide the best opportunities for population expansion in the
2 short term. Management actions were precluded from all parts of key watersheds
3 until a watershed analysis was completed in order to reduce the risk from
4 management activities.

5 6. A riparian reserve (Exhibit 2, V-32; AR 15a) was the portion of the
6 watershed that had direct influence on the aquatic ecosystem. This included the
7 area around fish bearing and non-fish bearing streams. Riparian reserves provided
8 the suite of ecological processes and functions required that influence the
9 productivity and integrity of aquatic ecosystems. Activities in all riparian reserves
10 were prohibited until a watershed analysis was completed.

11 7. Watershed analysis (Exhibit 2, V-53; AR 15a) was the procedure to
12 identify and evaluate the geomorphic and ecological processes operating in a
13 watershed. This formed the basis for planning and conducting activities within a
14 watershed and evaluating their impacts. The size of the watershed was originally
15 specified as 20-200 square miles, approximately a 5th field watershed. However,
16 this size has not been strictly adhered to. Some 5th field watersheds were too
17 large or too complex ecologically to be analyzed effectively. Watershed analysis, as
18 a consequence, has been conducted in 5th field and aggregates of 6th field
19 subwatersheds. The watershed analysis is supposed to guide planning that
20 achieves the ACS within the watershed.

21 8. Watershed restoration (Exhibit 2, V-59; AR 15a) was intended to restore
22 degraded ecosystems at the watershed scale. It was to be a comprehensive
23 program that restored the ecological processes and functions that created and
24 maintained habitat conditions for fish and other aquatic and riparian organisms.
25
26

1 9. The ACS objectives provide a framework for managing aquatic
2 ecosystems primarily at watershed and landscape (i.e., multiple watershed) scales.
3 They describe the attributes and distribution of aquatic ecosystems believed
4 necessary to provide conditions for maintaining currently strong populations of fish
5 and other aquatic and riparian dependent organisms and to recover currently
6 degraded ecosystems. They are not intended to be a hard set of criteria that could
7 or can be applied equally at all spatial scales of concern (i.e., site, watershed,
8 province, and region).

9 Ecosystem Dynamics and the Range of Variability

10 10. FEMAT emphasized the dynamic nature of aquatic ecosystems in the
11 region of the NWFP and the need to maintain the processes that create and
12 maintain habitat through time (Exhibit 2, V-28; AR 15a). Aquatic ecosystems in the
13 NWFP region are dynamic as a result of the physical characteristics, natural
14 disturbance events, and climatic features of the region [Naiman et al. 1992 (Exhibit
15 3); Benda et al. 1997 (Exhibit 4)]. Watersheds in the NWFP region are generally
16 in steep, mountainous terrain that is inherently unstable and receives large amounts
17 of precipitation. Much of the region was historically subjected to periodic natural
18 disturbances such as wildfire and large wind storms. The unstable terrain coupled
19 with the stochastic nature of storm and disturbance events resulted in pulses of
20 materials (i.e., sediment and wood) being delivered to stream channels.
21 Consequently, there was a wide variation in conditions at the site and watershed
22 scale over time (Naiman et al. 1992, Benda et al. 1997).

23 11. Understanding the implications of the focus on ecosystems and
24 ecosystem dynamics that were emphasized by the FEMAT is required in order to
25 understand how the ACS is to be applied at the various spatial scales. An
26 important, but not well understood, implication of employing an ecosystem level

1 strategy based on disturbance is that all parts of a watershed or subwatershed or
2 all subwatersheds may not be in "good" condition at every point in time [Naiman et
3 al. 1992, Reeves et al. 1995 (Exhibit 5)]. As described in the previous paragraph,
4 disturbance events, such as wildfire, landslides, and floods, maintained the
5 long-term productivity of aquatic ecosystems in the area covered by the NWFP.
6 These events would periodically deliver large amounts of materials (i.e., sediment
7 and wood) to valley bottoms and streams, often resulting in periods of "degraded"
8 conditions. Over time, several years to decades, systems would develop conditions
9 more favorable to fish. As a result, the historic landscape, and watersheds within it,
10 were a mosaic of patches of good habitat or subwatersheds in "good" condition
11 interspersed with patches in less favorable conditions. Reeves et al. (1995)
12 described the range of these conditions for streams in subwatersheds with little or
13 no impacts from human activities in the sandstone geology of the central Oregon
14 coast. Subwatersheds with degraded physical conditions supported fish
15 communities with low diversity and biomass. These were characterized by channels
16 with either deep deposits of gravel and few pieces of large wood or channels with
17 bedrock and many pieces of large wood. In contrast, subwatersheds in good
18 condition were those that had intermediate amounts of gravel, cobble, and large
19 wood. These conditions supported a fish community that had a high diversity and
20 biomass. Conditions within a subwatershed were not static but changed through
21 time, much as vegetation did; systems that were in less productive conditions
22 became more productive and productive systems may have become less
23 productive. The result was a mosaic of conditions in watersheds and
24 subwatersheds that shifted across the landscape with time. Reeves et al. (1995)
25 argued that Pacific salmon (*Oncorhynchus* spp.) had life-history attributes that
26 allowed them to persist in such an environment.

1 12. The ACS represents a major change in management of aquatic
2 ecosystems. It requires consideration of large spatial (i.e., watershed to landscapes)
3 and temporal scales (i.e., ≥ 100 years) and of the dynamic processes operating in
4 aquatic ecosystems in the area covered by the NWFP. The ACS is supposed to
5 maintain aquatic ecosystems within the range of variability at the site² and small
6 subwatershed scale and the larger subwatershed and watershed scale to provide
7 for acceptable populations of anadromous salmonids and other targeted organisms.

8 13. At the site or smaller subwatershed the range of variability includes
9 conditions that were immediately favorable to fish to those that were not very
10 productive (Reeves et al. 1995, Benda et al. 1997). Such large variability in
11 conditions at small spatial scales has been observed in terrestrial systems by
12 researchers in coastal Oregon (Wimberly et al. in press) and other areas (Turner et
13 al. 1993). Time from the last disturbance event determined the condition at the
14 small subwatershed to a large extent. More recently disturbed sites or
15 subwatersheds were less productive and those several years to decades away from
16 disturbance were more favorable for fish. Variability in the pattern of conditions
17 would be expected to differ among sites in a watershed based on geomorphology.
18 Sites in unconstrained reaches (i.e., wide valley, low gradient sites of natural
19 deposition) had a greater range of natural variability than did sites in constrained
20 reaches (i.e., higher gradient, narrow valley reaches).

21 Application of the ACS at Different Spatial Scales

22 14. Determining consistency with the ACS at the site or small subwatershed
23 is not as simple as assuming that all sites or small subwatersheds need to be in
24 "good" condition at all times and that any actions that may "degrade" a site or small
25

26 ² The site ranges in size from 0.1 to 1 square mile (Exhibit 2, Appendix V-I; AR 15a).

1 subwatershed violates the ACS. As described in the previous paragraph, conditions
2 at the small subwatershed may range from very favorable to unfavorable for fish
3 over time. The ACS aims to allow for the expression of these variable conditions
4 at a site or small subwatershed. However, it is not possible to evaluate consistency
5 with the ACS at the sites scale by simply looking at the individual sites alone.

6 15. Consistency at the small subwatershed is determined by the range of
7 variability established at the watershed or subwatershed. The range of variability
8 at the watershed or sub watershed scale is the distribution of conditions of smaller
9 subwatersheds that support acceptable populations of anadromous salmonids and
10 other aquatic and riparian dependent organisms. It may be expressed as the
11 frequency distribution of productive and non-productive sites and subwatersheds
12 in a subwatershed or watershed, respectively (Benda et al. 1997). The ACS was
13 designed to maintain and restore this variability or some desired range of variability
14 similar to the natural range of watersheds that will support acceptable levels of fish
15 populations.

16 16. Watershed analysis as proposed by FEMAT should identify this range
17 of variability at the watershed level. This was then expected to guide management
18 actions in the watershed and establish the criteria for determining consistency with
19 the ACS at the watershed or subwatershed level. If the current distribution of
20 conditions was determined to be within the acceptable range of variability for the
21 watershed or subwatershed, then presumably sites are in compliance with the ACS.
22 If the distribution of conditions was outside the acceptable range of variability then
23 the watershed or subwatershed was out of compliance with the ACS. Management
24 actions that would degrade a site or small subwatershed were not expected to
25 proceed under such circumstances unless it was established that the actions would
26 bring the system back within the acceptable level of variability in the long-term and

1 this outweighed any short-term negative impacts. Management activities are
2 focused on restoration in such cases. The potential impact of the aggregate of
3 proposed activities should be evaluated and the potential impact of this aggregate
4 on the range of variability determined. Actions that alter the distribution outside of
5 the desired range should be modified or eliminated.

6 17. The Riparian Reserve network was to provide opportunities for the
7 ecological processes that create and maintain habitat through time to be expressed
8 (e.g., delivery of wood sediment and water, input of nutrients, etc.). Management
9 was to insure that Riparian Reserves continued to function properly. Watershed
10 restoration was to restore the necessary ecological processes where they were lost
11 or altered as a result of past management activities.

12 18. In summary, aquatic ecosystems in the range of the NWFP are dynamic
13 and experience a wide range of conditions. All systems or parts of systems are not
14 necessarily in good condition at every point in time. The ACS was designed to
15 maintain this pattern so to provide for an acceptable number and distribution of
16 watershed and subwatersheds that support acceptable populations of aquatic
17 organisms. Determining consistency at the site scale requires understanding of the
18 required range of variability established at the watershed/subwatershed scale. The
19 presence of degraded conditions at individual sites or degraded subwatersheds can
20 not be always be interpreted as failure to comply with the ACS.

21 ////

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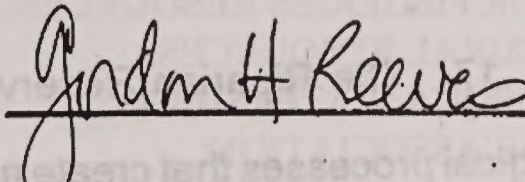
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1 I declare under penalty of perjury that the foregoing is true and complete.

2 DATED this 27 day of May, 1999.

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9 Gordon Reeves

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DECLARATION OF GORDON REEVES - 11

Jean E. Williams
Janice M. Schnelder
U.S. Department of Justice
Benjamin Franklin Station, P.O. Box 7369
Washington, D.C. 20044-7369

FOR PUBLICATION

UNITED STATES COURT OF APPEALS

FOR THE NINTH CIRCUIT

PACIFIC COAST FEDERATION OF
FISHERMEN'S ASSOCIATIONS, INC.;
INSTITUTE FOR FISHERIES RESOURCES;
OREGON NATURAL RESOURCES
COUNCIL; UMPQUA WATERSHEDS;
COAST RANGE ASSOCIATION;
HEADWATERS,
Plaintiffs-Appellees,

v.

NATIONAL MARINE FISHERIES

SERVICE,
Defendant,

and

DOUGLAS TIMBER OPERATORS;
NORTHWEST FORESTRY ASSOCIATION,
Defendants-Intervenors-
Appellants.

6689

PACIFIC COAST FEDERATION OF
FISHERMEN'S ASSOCIATIONS, INC.;
INSTITUTE FOR FISHERIES RESOURCES;
OREGON NATURAL RESOURCES
COUNCIL; UMPQUA WATERSHEDS;
COAST RANGE ASSOCIATION;
HEADWATERS,

Plaintiffs-Appellees,

v.

NATIONAL MARINE FISHERIES

SERVICE,
Defendant-Appellant,

No. 99-36027

D.C. No.

CV 99-00067-BJR

No. 99-36195

D.C. No.

CV 99-00067-BJR

OPINION

and

**DOUGLAS TIMBER OPERATORS;
NORTHWEST FORESTRY ASSOCIATION,
Defendants-Intervenors.**

Appeal from the United States District Court
for the Western District of Washington
Barbara J. Rothstein, District Judge, Presiding

Argued and Submitted
June 8, 2000--Seattle, Washington
Submission Vacated September 15, 2000
Resubmitted May 8, 2001

Filed May 31, 2001

Before: Alfred T. Goodwin, Procter Hug, Jr., and
Melvin Brunetti, Circuit Judges.

Opinion by Judge Goodwin

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COUNSEL

Katherine Barton, Department of Justice, Washington, D.C.,
for the defendant-appellant.

Mark Rutzick, Portland, Oregon, for the defendants-
intervenors-appellants.

Patti Goldman, Earthjustice Legal Defense Fund, Seattle,
Washington, for the plaintiffs-appellees.

OPINION

GOODWIN, Circuit Judge:

Six environmental organizations sued the National Marine Fisheries Service ("NMFS") for declaratory and injunctive relief to challenge four biological opinions which had the effect of clearing the way for 23 proposed timber sales in the Umpqua River watershed in southwestern Oregon. The district court granted substantial relief and the defendant agency, together with intervening timber operators, appeal.

The Pacific Coast Federation of Fishermen's Associations, Inc. and five other organizations representing fishermen and

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environmental concerns are collectively referred to as "Pacific Coast." Their principal claim is that the "no jeopardy" opinions issued by NMFS filed in Seattle, where the agency has its regional headquarters, were arbitrary and inadequately supported by the "best available science" as required by the Endangered Species Act ("ESA"). At the heart of the controversy is the impact of proposed timber sales on the Umpqua River cutthroat trout and the Oregon Coast coho salmon.¹ Douglas Timber Operators ("DTO") and the Northwest Forestry Association were allowed to enter the cases as defendant-intervenors. The cases have been consolidated for this appeal.

Pacific Coast alleged that NMFS acted arbitrarily and capriciously in reaching the conclusion that the proposed timber sales are not likely to jeopardize the continued existence of the listed species. The district court found that NMFS had acted arbitrarily and capriciously by assessing Aquatic Conservation Strategy ("ACS") compliance only at the watershed level, by failing to evaluate short-term degradations, and by failing to fully and sufficiently incorporate the watershed analysis consistently with the "best available science" requirements set by the ESA. The district court granted summary judgment in favor of Pacific Coast. Both NMFS and DTO filed timely appeals.

The DTO assert that the publication of the challenged biological opinions by NMFS is not a final agency action within the meaning of the Administrative Procedures Act, 5 U.S.C. § 704, and, therefore, that the district court did not have juris-

diction. The DTO also challenge the venue in the Western

1 At the time that the biological opinions were issued and this litigation was originally filed, the Umpqua cutthroat trout and the Oregon Coast coho salmon were listed as endangered and threatened, respectively, under the ESA. After the Umpqua cutthroat was determined to be part of a larger Evolutionarily Significant Unit ("ESU"), the species was delisted. Because NMFS is still required to have completed the biological opinions for the coho salmon, this delisting has no affect on the case at bar.

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District of Washington, asserting that the appropriate defendants are the Bureau of Land Management ("BLM") and Forest Service, whose proposed timber sales prompted this litigation, and whose headquarters are in Portland, in the District of Oregon.

JURISDICTION

The NMFS issued four biological opinions stating that 23 timber sales in the Umpqua River Basin were not likely to jeopardize the continued existence of the Umpqua cutthroat trout and the Oregon Coast coho salmon. The proposed sales are within the range of the northern spotted owl, and therefore fall within the region covered by the Northwest Forest Plan ("NFP"). The United States Forest Service ("USFS") and the BLM adopted the NFP in 1994. The plan was designed to provide a comprehensive management program for 24.5 million acres of federal forest lands throughout the range of the spotted owl. See Seattle Audubon Society v. Lyons, 871 F. Supp. 1291, 1304 (W.D. Wash. 1994), aff'd 80 F.3d 1401 (9th Cir. 1996). One of the key components of the NFP is the ACS, a comprehensive plan designed to maintain and restore the ecological health of the waterways in the federal forests.

There are four components to the ACS: (1) key watersheds (the best aquatic habitat, or hydrologically important areas), (2) riparian reserves (buffer zones along streams, lakes, wetlands and mudslide risks), (3) watershed analysis (to document existing and desired watershed conditions), and (4) watershed restoration (a long-term program to restore aquatic ecosystems and watershed health). The ACS also has binding standards and guidelines that restrict certain activities within areas designated as riparian reserves or key watersheds. Additionally, ACS has nine objectives designed to maintain or restore properly functioning aquatic habitats.

When a timber sale or other project is proposed for the NFP region, it is initially subject to an internal planning process by

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the action agency, either the USFS or the BLM. The action agency then creates a team of biologists and other resource management specialists to incorporate the NFP requirements, including ACS standards and guidelines. A biologist on the team uses a Matrix of Pathways and Indicators (the "MPI") and a checklist developed by NMFS to assess the project's effect on listed species. The MPI and checklist help the biologist to analyze 18 different habitat indicators and determine whether they are properly functioning, at risk, or not properly functioning. The biologists also determine whether the proposed action is likely to restore, maintain, or degrade the indicator. Projects that receive either zero or only one degrade checkmark are considered "not likely to adversely affect" listed species.

Those projects determined "likely [to] adversely affect" listed species, i.e., those that received one or more degrade checkmarks, are referred to a Level 1 Team. This team is made up of biologists from various agencies. It reviews the proposed project for ACS consistency. The team can suggest changes in the plan to bring it into ACS compliance.

If the Level 1 Team agrees that the project complies with ACS, it then forwards the project to NMFS for formal consultation. Otherwise, the team elevates the review to a Level 2 Team, and the project undergoes the same review process. Failure to reach a consensus elevates the project to a Level 3 Team. Once one of these three teams approves the project, it goes to NMFS for ESA consultation.

The NMFS must review the project pursuant to Section 7 of ESA, which requires federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of" any species listed as threatened or endangered under the ESA. 16 U.S.C. § 1536(a)(2). Then, NMFS must issue a Biological Opinion.

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Pacific Coast sued earlier to challenge the first NMFS opinions with regard to several of the same proposed timber sales in Pacific Coast Federation of Fishermen's Associations, Inc.

v. National Marine Fisheries Service, No. C97-775R (W.D. Wash., May 29, 1998) ("PCCFA I"). Pacific Coast challenged in the district court NMFS's Programmatic Biological Opinion and three other site-specific biological opinions.

Reviewing the Programmatic Biological Opinion in PCFFA I, the district court held that NMFS may assume that projects that are consistent with ACS are unlikely to jeopardize the continued existence of a listed species. Jurisdiction in that litigation was not challenged, and there was no appeal.

The court invalidated the site-specific biological opinions in the earlier case because the opinions lacked a basis on which NMFS could conclude that the degrade checkmarks indicated on MPI would have only minor and transitory effects. The agency reinitiated the consultation process after clarifying the documentation required to show ACS consistency and articulating guidance on the "proper" use of MPI in the analysis at the various scales. Using these new procedures, NMFS issued the four biological opinions challenged in this case.

Pacific Coast brought this action under ESA, 16 U.S.C. § 1536. The district court found jurisdiction to adjudicate the claim under 28 U.S.C. § 1331 and under the Administrative Procedure Act, 5 U.S.C. § 702. This court reviews questions of jurisdiction de novo. See Ecology Center, Inc. v. USFS, 192 F.3d 922, 924 (9th Cir. 1999).

The DTO assert that the proper defendants are USFS and BLM and that claims against those entities can be brought only in the District of Oregon. They also assert that USFS and BLM are indispensable parties that should have been joined, and that in their absence the district court acted without a complete administrative record.

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FINAL AGENCY ACTION

The DTO argue that the challenged biological opinions are not final agency actions. See 5 U.S.C. § 704. Only final agency decisions are subject to review under the APA. See Ohio Forestry Ass'n, Inc. v. Sierra Club, 523 U.S. 726, 732 (1998), and Ecology Center, Inc., 192 F.3d at 924-26. The NMFS has not joined in the jurisdictional challenge.

The DTO argue that Pacific Coast has chosen the wrong target in an effort to stop all logging in a large part of Western Oregon by seeking to overturn the opinions of NMFS which are only interlocutory in the decision making process of the Forest Service and BLM, whose respective plans to approve the timber sales in the Umpqua River watershed are the real target of this suit. We do not accept that characterization.

The DTO attempt to distinguish Bennett v. Spear, 520 U.S. 154 (1997), in attacking jurisdiction in these cases. The Supreme Court held in Bennett that a jeopardy opinion was final agency action because it effectively stopped further proceedings by the action agency. The Court reasoned that a jeopardy opinion has "direct and appreciable legal consequences," id. at 178, because it "alters the legal regime to which the action agency is subject," id. at 169. In the case before us, NMFS issued a "no jeopardy" opinion, which became this agency's final action. We have found no authority for the proposition that while a "jeopardy" opinion is reviewable as a final agency action, a "no jeopardy" opinion is not final and reviewable.

This court, following Bennett v. Spear, applied the two-part test for ascertaining finality of agency action in Ecology Center, Inc. v. United States Forest Service, 192 F.3d at 925-26. We held that for an administrative agency action to be considered final, "(1) the action should mark the consummation of the agency's decision making process; and (2) the action should be one by which rights or obligations have been

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determined or from which legal consequences flow." See id. at 925.

This no-jeopardy opinion satisfies the first part of our test because the issuance of a biological opinion marks the "consummation" of NMFS's consultation process. See id. The opinion meets the second part of the test because it "alters the legal regime" and has direct and appreciable legal consequences. As a practical matter, the opinion and its accompanying Incidental Take Statement grant immunity to the proposed actions of other agencies required to obtain an NMFS opinion before proceeding with their own actions, which these plaintiffs seek to block.

We are satisfied that the trial court had jurisdiction, and

that BLM and the Forest Service were not necessary parties. Venue, accordingly, was properly placed in the Western District of Washington.

THE MERITS

Agency decisions under ESA are governed by the Administrative Procedure Act, which requires an agency action to be upheld unless it is found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); Friends of the Earth v. Hintz, 800 F.2d 822, 830-31 (9th Cir. 1986). This deferential standard is designed to "ensure that the agency considered all of the relevant factors and that its decision contained no 'clear error of judgment.'" Arizona v. Thomas, 824 F.2d 745, 748 (9th Cir. 1987) (quoting Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971)). Agency action should be overturned only when the agency has "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency

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expertise." Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto Ins. Co., 463 U.S. 29, 43 (1983). Essentially, we must ask "whether the agency 'considered the relevant factors and articulated a rational connection between the facts found and the choice made.'" Natural Resources Defense Council v. United States Dep't of the Interior, 113 F.3d 1121, 1124 (9th Cir. 1997) (quoting Resources, Ltd. v. Robertson, 35 F.3d 1300, 1304 (9th Cir. 1993), in turn quoting Pyramid Lake Paiute Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1414 (9th Cir. 1990)). A biological opinion may also be invalid if it fails to use the best available scientific information as required by 16 U.S.C. § 1536(a)(2). See Greenpeace Action v. Franklin, 14 F.3d 1324, 1336 (9th Cir. 1993).

Pacific Coast argued, and the district court agreed, that NMFS acted arbitrarily and capriciously by (1) ignoring site-specific project effects and limiting its ACS compliance analysis to the watershed scale, (2) focusing on a long-term evaluation of ACS compliance that effectively masks all short-term impacts that may have adverse effects on listed species, (3)

failing to consider activities on federal lands that might adversely affect salmonid species, (4) "tiering " to BLM or USFS determinations of ACS consistency for Projects in Riparian Reserves where no aquatic benefits have been identified, and (5) failing to adequately consider, fully incorporate, or adequately explain deviations from the watershed analysis recommendations, which are designed to accomplish ACS objectives.

One preliminary matter must be addressed to avoid confusion. The NMFS argues that Pacific Coast and the district court inappropriately have required NMFS to serve as a review board or oversight committee for BLM and USFS determinations of ACS consistency. This argument appears significant, but in fact lacks substance. The NMFS is required under NFP to determine whether or not a project is likely to adversely affect a listed species. The NMFS is not required

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by NFP to determine ACS consistency. However, in PCFFA I, the district court held that NMFS was permitted to assume that implementation of projects under USFS's Land and Resource Management Plan ("LRMP") or BLM's Resource Management Plan ("RMP") would result in "no jeopardy" to the listed fish species if those projects were conducted in accordance with ACS. Therefore, because NMFS is allowed to equate ACS consistency with a no jeopardy finding, NMFS chooses to inquire into ACS consistency. Presumably, other methods of reaching a jeopardy determination are available to NMFS. The coincidence of ACS consistency inquiries is immaterial. The NMFS's primary obligation is to determine a project's effect on listed fish species. The action agencies, as part of their analyses, must also determine ACS consistency. That they are able to discharge dissimilar duties by the same means does not allow either party to fail to undertake its responsibilities.

WATERSHED SCALE ACS CONSISTENCY

In determining ACS consistency for the 23 timber projects challenged in this case, NMFS analyzed the projects' consistency with ACS at the watershed level. A watershed, or fifth field, generally covers between 20 to 200 square miles of land. This equates to between 12,800 and 128,000 acres. The largest watershed considered with reference to projects at issue here is 350 square miles, or 224,000 acres. By contrast,

a project site generally covers only a few sections (square miles) or fractions of sections. The NMFS conducts its analysis of the program by assessing the affects of any project level degradation on the entire watershed. Any degradation that cannot be measured at the watershed level is considered to be consistent with both ACS standards and objectives and therefore warrants a "no jeopardy" finding.

Pacific Coast contends that the watershed measure effectively masks all project level degradation. This argument raises two questions: (1) whether, because a 128 acre project

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represents only 1% to 0.1% of a watershed, any degradation would be perceptible at the watershed level; and (2) whether any effect was given to the cumulative degradation in an ACS. In PCFFA I, the court held that NMFS cannot reach a no jeopardy determination without analyzing whether the site-specific projects are in fact complying with ACS. See PCFFA I at 30. The court found that evidence of site specific degradation and the lack of mitigation showed that NMFS rationally could not find the "proposed actions . . . consistent with ACS's mandate that agencies maintain and restore aquatic systems within the range of the northern spotted owl." Id. It is clear from the court's order that application of ACS at the project level explained how NMFS could assume, for that project, that a proposed action would not jeopardize listed fish. The emphasis on site-specific evaluation is evident in the district court's opinion in PCFFA I, at 24.

The NMFS contends that the proper level to evaluate ACS consistency is the watershed, because NFP and ACS are aimed at maintaining and restoring millions of acres of forest lands. Given that overall protection of forest and water resources is the concern of both NFP and ACS, it does not follow that NMFS is free to ignore site degradations because they are too small to affect the accomplishment of that goal at the watershed scale. For some purposes, the watershed scale may be correct, but NFP does not provide support for so limiting NMFS review. The purpose of ACS is to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This general mission statement in NFP does not prevent project site degradation and does nothing to restore habitat over broad landscapes if it ignores the cumulative effect of individ-

ual projects on small tributaries within watersheds. The agency also must determine "how the proposed project or management action maintains the existing condition or moves it within the range of natural variability." Record of Decision for Amendments to Forest Service and Bureau of Land Man-

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agement Planning Documents Within the Range of the Northern Spotted Owl (hereinafter "Record of Decision for the Northern Spotted Owl"), Attachment A, at B-10 (April 13, 1994). The NMFS relies on this requirement to show that consistency will be attained at the watershed level. However, it is unclear whether NMFS performed an analysis of the cumulative effect of small degradations over a whole watershed. Pacific Coast asserts that NMFS did not consider cumulative effect. The NMFS had an opportunity to place in the record evidence demonstrating that it considered cumulative effect. We find nothing to show that it did. Appropriate analysis of ACS compliance is undertaken at both the watershed and project levels.

Pacific Coast argues that the Forest Ecosystem Management Assessment Team ("FEMAT") scientific team, which developed ACS, believed that ACS was to be implemented "at four spatial scales: regional, province/river basin, watershed, and site." Pacific Coast also argues that NMFS has indicated that the "accumulation of effects at the landscape level from numerous actions, if not fully arrested at the project scale, would reduce the likelihood of both survival and recovery of the species." Although the NFP, FEMAT, and ACS do not appear to address the proper scale for implementation of ACS, they explain that spatial levels should be considered and that watershed consistency is a primary goal. See Record of Decision for the Northern Spotted Owl, at B-9 and FEMAT, Forest Ecosystem Management: An Ecological, Economic, and Social Assessment (July 1993), at V-58. However, the record contains no proof that the cumulative effect of site specific degradation was considered in reaching a no jeopardy opinion at the regional watershed level.

The district court's earlier decision to allow NMFS to assume no jeopardy from an ACS consistency finding appears to be linked to the belief that ACS consistency was to be measured at the project level. This approach seems reasonable as far as it goes. Any project that maintains or restores fish habi-

tat presumably would not jeopardize the survival of the species. However, a project that degrades habitat at the project level must be included in any realistic study at the watershed scale. Its disregard of projects with a relatively small area of impact but that carried a high risk of degradation when multiplied by many projects and continued over a long time period is the major flaw in NMFS study. Without aggregation, the large spatial scale appears to be calculated to ignore the effects of individual sites and projects. Unless the effects of individual projects are aggregated to ensure that their cumulative effects are perceived and measured in future ESA consultations, it is difficult to have any confidence in a wide regional no-jeopardy opinion. Failure to account adequately for the cumulative effects of the various projects undermines the assumptions that the district court authorized NMFS to make in PCFFA I. If the effects of individual projects are diluted to insignificance and not aggregated, then Pacific Coast is correct in asserting that NMFS's assessment of ACS consistency at the watershed level is tantamount to assuming that no project will ever lead to jeopardy of a listed species.

Pacific Coast notes that many of these sales are located in areas that are already considered "not properly functioning," but still NMFS requires MPI to show a "measurable worsening of those conditions across the entire watershed." Pacific Coast contends that biological opinions are issued for projects in the same watersheds without any mention of each other. If in fact NMFS disregards these effects as "localized" when they can have significant aggregate effects, it acts arbitrarily and capriciously.

The FEMAT report, which was instrumental in developing ACS, emphasized the importance of curtailing incremental aquatic habitat degradation because the effects of numerous actions can cause significant damage to fish species and their habitat. See FEMAT, Forest Ecosystem Management: An Ecological, Economic, and Social Assessment V-2 (1993). NMFS's assuming away site-specific degradations

that could lead to a jeopardy finding contradicts the purpose of ESA and is arbitrary. Any effect on a particularly important spawning area should show up as a degrade rating for the entire watershed. Confirming that proper aggregation occurs is central to a determination whether the district court's

assumptions under the site-specific ACS consistency regime still hold true under the watershed scale regime.

DISREGARDING SHORT-TERM EFFECTS

Pacific Coast challenged NMFS's evaluation of ACS consistency over a time frame of 10 to 20 years. The district court agreed. The court found that "NMFS has failed to adequately assess the short term impacts of the timber sales and . . . has failed to adequately explain its assumption that passive restoration will adequately mitigate the adverse impacts of logging." The district court found that the "NMFS could not rationally conclude, based on the evidence before it, that evaluating only long-term impacts of agency activities satisfied its mandate to ensure ACS compliance. Its failure, therefore, to evaluate the short-term impacts, (i.e. impacts that would manifest in less than a ten-year period) was also arbitrary and capricious." The district court's order requires NMFS to evaluate ACS consistency immediately after the project action is completed.

We find nothing in the record to authorize NMFS to assume away significant habitat degradation. Each of the biological opinions challenged acknowledges project-scale degradations but then deems that degradation inconsequential. Under the practice adopted by NMFS, only degradations that persist more than a decade and are measurable at the watershed scale will be considered to degrade aquatic habitat. This generous time frame ignores the life cycle and migration cycle of anadromous fish. In ten years, a badly degraded habitat will likely result in the total extinction of the subspecies that formerly returned to a particular creek for spawning.

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The NMFS predicts that more trees will grow within the watershed during the ensuing decade than are cut in the proposed project and, therefore, concludes that the "short-term" and "localized" effects of the logging will be naturally mitigated by regrowth. This optimism may be justified for the purpose of counting trees, but for the purpose of counting anadromous fish, it is wholly unrealistic. Pacific Coast contends that there is no scientific evidence in the record to support the conclusion that natural vegetation regrowth will adequately mitigate the degradation caused by the logging projects and ensure that fish that never hatched could return to the recovered spawning habitat. We agree.

The record contains the expert opinion of a Level 1 Team biologist that such reliance on projected "restoration" is "scientifically unsound." The NMFS does not and cannot explain adequately its disregard of short-term effects.

The NMFS never disputes that short-term effects have the potential to jeopardize listed fish populations. On the contrary, NMFS believes that the next few generations will be critical to Umpqua River anadromous species. In the Programmatic Biological Opinion, NMFS states that "even a low level of additional impact to any life form, especially the anadromous form which is at critically low levels, may reduce the likelihood of survival and recovery of the ESU as a whole." Given the importance of the near-term period on listed species survival it is difficult to justify NMFS's choice not to assess degradation over a time frame that takes into account the actual behavior of the species in danger.

NON-FEDERAL LANDS

The district court properly rejected the PCFFA argument as to the proper treatment of non-federal lands. As the court noted, that issue had been disposed of in PCFFA I.

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ACS CONSISTENCY DETERMINATIONS IN RIPARIAN RESERVES

The NMFS concluded that three proposed sales: Salvage II, Sugar Pine Density Management, and Little River were "not likely to adversely affect" the listed species. Little River was a small sale to be permitted under a research exception. The other two sales were geographically remote from any vulnerable water course. We find nothing in the record to call into question NMFS opinions with respect to these sales. Accordingly, we vacate the order appealed from insofar as it prohibited those three sales. With the exceptions noted, the district court order was free from error, and is affirmed. The appellees are entitled to costs on appeal.

VACATED IN PART AND AFFIRMED IN PART.

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APPENDIX B

EFFECTS FINDINGS CONSISTENCY ASSESSMENT



Appendix B

Consistency Review - 1994 Northwest Forest Plan Findings

Appendix B contains a consistency review of findings within the Final Supplemental EIS on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, Volume I, February 1994, (Northwest Forest Plan FSEIS). The Interdisciplinary Team (IDT) reviewed the Northwest Forest Plan FSEIS to determine whether the findings or rationale within the Final SEIS could be affected, influenced or altered by the proposed language change in the ACS SEIS.

The IDT found that none of the effects findings explicitly rely on the language proposed to be amended. The Northwest Forest Plan FSEIS effects' findings rely on the four components of the Aquatic Conservation Strategy (watershed analysis, watershed restoration, Riparian Reserves and Key Watersheds). These components are retained in the Proposed Action/Alternative A.

The ACS SEIS is not intended to reconsider the analysis within the Northwest Forest Plan FSEIS. Analysis and findings within the FSEIS are incorporated by reference. Analysis and findings are excerpted and/or briefly described.

The action alternatives within the ACS SEIS are intended to improve agency success implementing Alternative 9. Managers would attempt to implement Alternative 9 with both No Action and the Proposed Action/Alternative A in the ACS SEIS. However, managers have been unable to achieve harvest levels associated with Alternative 9 as adjusted in individual RMPs (see ACS FSEIS Chapter 3&4 for more information). Harvest levels have been closer to Alternative 1. As discussed previously, agencies would continue to plan projects that follow Northwest Forest Plan principles (Alternative 9). Based on public comments received on the Draft SEIS, the projects most likely to be stopped or delayed include an element of timber harvest within late-successional and old-growth forest.

The comments state that "faithful implementation of the ACS" would exclude such harvest. Given these attitudes, land managers would be encouraged to avoid such harvests (see BLM Bulletin for example of "interim" direction). In this regard, the results of No Action would more likely result in harvest levels (and environmental effects) more like Alternative 1.

Frequently, the Northwest Forest Plan FSEIS lumped Alternatives 1 and 9 in reference to effects on aquatic ecosystems. This is because both alternatives included large Riparian Reserves and the Aquatic Conservation Strategy. No Action and the Proposed Action/Alternative A within the ACS SEIS retain the Aquatic Conservation Strategy components, including large Riparian Reserves. The clarification addressed by the Proposed Action/Alternative A is a matter of scale of analysis and documentation requirements. None of the findings related to the Aquatic Conservation Strategy components or the system of Riparian Reserves are sensitive to these clarifications. However, No Action would likely have results more similar to Alternative 1 to the extent fewer projects would likely be implemented.

Chapter 1 - Purpose and Need

Chapter 1, pgs. 1 - 7

Chapter 1 described the underlying need for action. It characterized the need by referring to a speech by President Bill Clinton:

“[As we craft a plan, we need to protect the long-term health of our forests, our wildlife, and our waterways.... [We hold them in trust for future generations... We must never forget the human and the economic dimensions of these problems. Where sound management policies can preserve the health of forest lands, [timber] sales should go forward... The plan should produce a predictable and sustainable level of timber sales and non-timber resources that will not degrade or destroy the environment. “

Chapter 1 characterized the Purpose as:

“[Our efforts must be, insofar as we are wise enough to know it, scientifically sound, ecologically credible, and legally responsible... We will do our best to make the federal government work together and work for you. We may make mistakes but we will try to end the gridlock within the Federal Government and we will insist on collaboration not confrontation.”

No analytical assumptions or conclusions within this section depend on or are sensitive to differences between No Action and the Proposed Action/Alternative A.

Chapter 2 - The Alternatives

Chapter 2, pgs. 3 - 84

Chapter 2 of the 1994 FSEIS described the alternatives considered. References to the Aquatic Conservation Strategy within this chapter are applicable to both the Proposed Action/Alternative A and No Action:

“The Riparian Reserves provide an area along all streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis...The Aquatic Conservation Strategy was developed primarily to protect salmon and steelhead, and is a refinement of the approach outlined in Thomas et al. (1993). “

“The four elements of the strategy are: Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration. These components are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. All components of this strategy apply to all alternatives with the exception of Alternative 7... The underlying need (see Chapter 1) of providing for late-successional and old-growth forest habitat and minimizing adverse economic effects substantially limited the range of reasonable alternatives available for analysis.”

This chapter described Alternative 1:

“This alternative is designed to have the highest probability of meeting five biological criteria...Essentially, all old-growth forests would be protected; forests adjacent to streams would receive significant protection to protect fish; and, to permit spotted owl dispersal, some forest cover would be retained in areas where timber harvest is allowed.”

Alternative 9 was described as:

“Alternative 9 is the preferred alternative for this SEIS. It is the alternative that most closely offers the specific management direction that would put into effect the proposal that President Clinton announced on July 1, 1993, titled "The Forest Plan: For a Sustainable Economy and a Sustainable Environment" (Clinton and Gore 1993).”

Both Alternative 1 and Alternative 9 had the same guidelines for Riparian Reserves. Both included the ACS. No analytical assumptions or conclusions within this chapter depend on or are sensitive to differences between No Action and the Proposed Action/Alternative A.

Chapter 2 provided a comparison table that demonstrates timber volume (PSQ) associated with Alternatives 1 and 9. Alternative 1 is shown to produce less than 1/10th the amount of timber each year as Alternative 9. Timber sales offered in recent years have reached levels closer to Alternative 1 than Alternative 9. The No Action alternative would likely result in continued low harvest levels relative to Alternative 9 (as adjusted in

individual RMPs). Chapter 3&4 of the ACS FSEIS discloses that Proposed Action/Alternative A would likely help agencies implement projects to meet Northwest Forest Plan goals.

Chapter 2 summarized and compared a variety of effects discussed in Chapter 3&4. These are addressed in the Chapter 3&4 review below.

Chapter 3&4

Affected Environment and Environmental Consequences

Chapters 3&4, pgs. 3 –10: Introduction through Cumulative Effects

No analytical assumptions or conclusions within this chapter depend on or are sensitive to differences between No Action and the Proposed Action/Alternative A. Specific references are discussed below.

Chapters 3&4, pgs. 11 – 24: Ecosystems and Species

This section described the various ecological provinces that make up the Northwest Forest Plan area. Implementation of the Proposed Action/Alternative A would not change the effects findings.

Chapters 3&4, pgs. 24 – 51: Terrestrial Ecosystems

The Terrestrial Ecosystems section of Chapters 3&4 focused on an analysis of the alternatives relative to their ability to provide for and maintain a functional and interconnected, late-successional forest ecosystem. Three attributes, as listed below, were used to rate each alternative in relation to four possible outcomes in each attribute.

- Abundance and ecological diversity – the acreage and variety of plant communities and environments.
- Processes and functions – the ecological actions that lead to the development and maintenance of the ecosystem, and the values of the ecosystem for species and populations.
- Connectivity – the extent to which the landscape patterns of the ecosystem provides for biological flows that sustain animal and plant populations.

Late –Successional reserves were intended to provide the primary mechanism for maintaining large blocks of late-successional habitat within the range of the northern spotted owl. However, the FSEIS stated that:

“Attributes (1) abundance and diversity, and (3) connectivity, are expected to be strengthened by the application of Riparian Reserve Scenario 1...”

This section made repeated references to the Riparian Reserves and their conservation function. The Proposed Action/Alternative A does not change any Riparian Reserve Standard and Guideline, nor does it change direction related to adjustment of Riparian Reserve boundaries.

The Riparian Reserve scenario associated with both Alternative 1 and 9 would contribute to achieving predicted outcomes as described in this section of the FSEIS.

“Application of Riparian Reserve Scenario I in the intermittent streams would benefit a wide variety of terrestrial and aquatic species by providing additional habitat. These species include the northern spotted owl, coho salmon, amphibians, small mammals, and some vascular plants. “

Table 3&4-9 arrayed percentage probabilities that late-successional forest connectivity would be strong to very strong (Outcomes 1 and 2). Alternative 1 was associated with a probability of 92 percent in moist provinces and 76 percent in dry provinces. Alternative 9 was associated with a probability of 80 percent in moist provinces and 66 percent in dry provinces.

To the extent that No Action results in forest management similar to Alternative 1 in terms of old-growth harvest, greater probabilities of strong to very strong connectivity would be predicted. The Proposed Action/Alternative A would be more likely to have results similar to Alternative 9. The Northwest Forest Plan assumed a common, 100-year timeframe to evaluate the different alternatives. This is consistent with the Proposed Action/Alternative A interpretation that many Northwest Forest Plan objectives (including the ACS) are long-term objectives that cannot be achieved at the site-scale.

Chapters 3&4, pgs. 51 – 82: Aquatic Ecosystems

The FSEIS stated:

“The likelihood of achieving an outcome of sufficient quality, distribution and abundance of habitat to allow fish populations to stabilize, well distributed across federal lands, is lower for Alternatives 2, 3, 5, 6, and 10 than for Alternatives 1, 4, and 9. Alternative 9’s standards and guidelines would provide a level of habitat protection comparable to Alternative 4 because of the incorporation of Riparian Reserve Scenario 1 discussed in this chapter. However, the Assessment Team concluded that all alternatives will reverse the trend of degradation and begin recovery of aquatic ecosystems on federal lands within the range of the northern spotted owl except for Alternatives 7 and 8. Even if changes in land management practices and comprehensive restoration programs are initiated, it is possible that no alternative will completely recover all degraded aquatic systems within the next 100 years.”

“The ecosystem assessment shows that the likelihood of attaining a functional and interconnected late-successional and old-growth forest ecosystem in the next 100 years is reduced because some characteristics of terrestrial ecosystems will not be obtained for at least 200 years. Similarly, the Assessment Team expected that degraded aquatic ecosystems will not be fully functional in 100 years. Faster recovery rates are probable for aquatic ecosystems under Alternatives 1 and 4, and Alternative 9, which includes the standards and guidelines added since the Draft SEIS than under the other alternatives (Figure 3&4-6). Alternatives 1 and 4 and Alternative 9 with the standards and guidelines incorporated since the Draft SEIS would reduce management-related disturbance across the landscape due to application of a larger Late-Successional Reserve network and use of the more protective Riparian Reserve Scenario 1 which requires wider Riparian Reserve widths for intermittent streams in Tier 2 Key Watersheds and non-Key Watersheds.”

Neither alternative in the ACS SEIS would change the assumptions or conclusions stated in the above paragraph. Watershed analysis and the ACS objectives were discussed in this section:

“Decision makers will use the information developed during a watershed analysis to support decisions and to determine if a proposed project meets Aquatic Conservation Strategy objectives. This is a new approach; in the past, proposed projects were considered from the context of what effects (positive and negative) a proposed project would have on the conditions and functions and processes of a watershed.”

The Proposed Action/Alternative A within the ACS SEIS would modify the approach suggested by the aforementioned paragraph. Under the Proposed Action/Alternative A, decision-makers would use the results of watershed analysis to provide context for

project planning. This approach is consistent with other sections of the Northwest Forest Plan and FSEIS as discussed throughout the ACS SEIS and Appendices.

The FSEIS addressed Key Watersheds:

“The 143 Tier 1 Key Watersheds were selected specifically for contributing directly to the conservation of habitat for at-risk anadromous salmonids, bull trout, and resident fish species. The 21 Tier 2 Key Watersheds are important sources of high quality water (Appendix B6, Table B6-3).”

These expected outcomes to at-risk anadromous salmonids would not change as a result of the Proposed Action/Alternative A. The role of Key Watersheds is consistent between the alternatives.

Standards and Guidelines associated with Riparian Reserves are discussed:

“Alternatives 1 and 4 and Alternative 9 which includes the standards and guidelines incorporated since the Draft SEIS benefit aquatic and riparian habitats more than the other alternatives. These benefits are principally due to: (1) the application of Riparian Reserve Scenario 1 to intermittent streams in Tier 2 Key Watersheds and non-Key Watersheds, (2) the highest amounts of Late-Successional Reserves within Key Watersheds and throughout the range of the northern spotted owl, and (3) the least amount of the matrix contained within inventoried roadless areas. Aquatic and riparian habitats are expected to recover faster under Alternatives 1, 4 and 9, in part, due to these factors.”

Both of the ACS SEIS alternatives are consistent with these outcomes.

Chapters 3&4, pgs. 83 – 111: Air and Water Quality and Soil Productivity

“The effects to water quality under the alternatives vary depending on the acreages and distribution of the various land allocations and the type and location of land disturbing activities occurring under the alternative. The **most significant factors** related to potential water quality effects for each alternative are the Riparian Reserve scenarios, the level and location of road building, and the amount and method of timber harvest permitted.” “Alternatives 1, 4, and 9 would have the least adverse effects to water quality” (**Bold Emphasis added**)

All ACS SEIS alternatives include the Riparian Reserve scenario described in this reference. The level and location of road building and amount of timber harvest would not exceed that assumed in Alternative 9 in any alternative. Project design criteria would not be expected to change. This is because the Standards and Guidelines are consistent across both alternatives. FSEIS findings about water quality would also remain unchanged.

“Alternatives 2, 3, 5, 6 and 10 have the potential for comparatively greater effects to water quality than Alternatives 1, 4, and 9, primarily because they provide less protection for intermittent streams in Tier 2 Key Watersheds and non-Key Watersheds. Alternatives 7 and 8 have the greatest potential to impact water quality of the 10 alternatives analyzed in this SEIS.”

Both the alternatives in the ACS FSEIS provide full protection for intermittent streams and non-Key Watersheds.

“Based on the Riparian Reserve scenarios and other components of the Aquatic Conservation Strategy, all of the alternatives except 7 and 8 are expected to maintain or improve water quality, although watershed recovery rates would be quickest for Alternatives 1, 4, and 9.”

The rates of recovery in both Alternatives 1 and 9 (and No Action and the Proposed Action/Alternative A) are based on the land allocations, including Key Watersheds. These are consistent between all alternatives in the ACS SEIS. See table 3&4 – 13 and table 2-4). Water quality is discussed on page 107. These findings will not change under No Action or the Proposed Action/Alternative A because both include the four components of the ACS. Roads and harvest levels outside of Riparian Reserves may be higher under the Proposed Action/Alternative A than No Action (No Action is associated with results more similar to Alternative 1 in the Northwest Forest Plan), but both alternatives would be within the range considered.

“The level of water quality protection under Alternatives 1, 4, and 9 should also benefit water supply systems within and downstream from lands administered by the Forest Service and BLM. The Riparian Reserve scenarios and other components of the Aquatic Conservation Strategy under these three alternatives should contribute to the ability of water systems to remain unfiltered and comply with Safe Drinking Water Act requirements...[a]dverse cumulative effects to water quality and water supply systems would be the greatest under Alternatives 7 and 8 and the least under Alternatives 1, 4, and 9. The difference in cumulative effects among alternatives is primarily a function of the alternatives’ proposed level of land disturbance (e.g., roads, harvest levels) and the degree of Aquatic Conservation Strategy adoption.”

The 1994 FSEIS discussed the Aquatic Conservation Strategy on page 107, stating:

“The broad scale application of the full Aquatic Conservation Strategy within the range of the northern spotted owl will significantly reduce the potential for adverse cumulative effects to water quality. Land disturbances will be more localized and related primarily to land allocations and standards and guidelines that apply. Cumulative effects will be further addressed in subsequent analyses and for tiered plans and projects.”

Both No Action and the Proposed Action/Alternative A include the same land allocations

and standards and guidelines, and site-specific analysis requirements under NEPA (including cumulative effects analysis) are consistent between these alternatives. No Action may not allow "broad scale application of the full ACS" to the extent that No Action results in implementation of fewer projects needed to contribute to achievement of Northwest Forest Plan and ACS objectives. Overall "land disturbance" is predicted to be lower for No Action, assuming fewer projects implemented. In this sense, No Action is more similar to Alternative 1 than Alternative 9.

The FSEIS discussed the role of non-federal lands (3&4-108):.

"The role of nonfederal landowners is significant because water quality protection on federal lands alone may not ensure attainment of water quality standards downstream."

This statement remains true for both No Action and the Proposed Action/Alternative A. Page 3&4 202 also addressed non-federal land:

"The success of the strategy does not depend on actions on nonfederal lands. Many of the federal watersheds occur upstream of nonfederal watersheds. Thus, the strategy can succeed at maintaining and restoring the aquatic and riparian habitats regardless of what happens on nonfederal lands but that would not ensure population viability of many of the fish stocks evaluated in this SEIS. This statement is less true in multi-ownership watersheds, particularly for BLM administered lands that are juxtaposed between nonfederal parcels."

The FSEIS also compared the ACS with water quality, fish, and riparian protections on non-federal land.:

"Riparian Reserves and the other components of the Aquatic Conservation Strategy would provide greater protection of water quality, fish habitat, and riparian areas than is currently required for nonfederal lands, particularly for Alternatives 1, 4, and 9."

This remains consistent under both No Action and the Proposed Action/Alternative A. Although there have been changes to the Forest Practices Act in Oregon, application of Riparian Reserves in the ACS remains more comprehensive set of best management practices, largely due to the Riparian Reserve land allocation along intermittent streams.

Soils and soil productivity were discussed on page 3&4-112.:

"The most common types of management disturbances that affect soils and related long-term productivity include soil displacement and compaction, erosion (surface and mass wasting), and alteration of nutrient status and soil biology. Late-Successional Reserves, Riparian Reserves, and Administratively Withdrawn Areas have the highest probability of maintaining long-term soil productivity because they will have the least amount of management-induced disturbance."

Both No Action and the Proposed Action/Alternative A include the same land allocations and Standards and Guidelines for reserves and withdrawn areas. These areas will continue to have the least amount of management-induced disturbance under both alternatives.

Chapters 3&4, pgs. 113 – 130: Process for Assessing Effects of Alternatives on Species habitat sufficiency on Federal Lands Within the Range of the Northern Spotted Owl

Late-successional The alternatives within the 1994 FSEIS were reviewed for their contribution to retention of late-successional habitat and species (3&4-115):

“More than 1000 species were identified as being associated with late-successional forests on federal lands... In addition to this list of species, 15 functional groups of arthropods, representing more than 8,000 individual species, were reviewed...”The rating process was a subjective evaluation of the sufficiency of the amount and distribution of late-successional and old-growth habitat on federal lands under each option to support the species or group of species over the next 100 years. ...”(FEMAT Report, p. II-29)”

The original SAT, FEMAT, and 1994 FSEIS analyses reviewed thousands of organisms for their link to old-growth forests. They evaluated the relative likelihood of four viability outcomes under the different alternatives. These assessments focused on the link of each of the organisms to old-growth forests and did not rely directly on the ACS. Riparian Reserves were expected to provide benefits to late-successional habitats and species.

Chapters 3&4, pgs. 130 – 205: Species Not Threatened or Endangered

This section described analyses of nonvascular plants and allies, fungi, lichens, vascular plants, invertebrates (including mollusks), amphibians, reptiles, birds, and mammals (including bats). Riparian Reserves were expected to provide habitat riparian-dependent species not threatened or endangered. For example, on page 3&4-147 outcome ratings for lichens were generally correlated with:

”the acreage of Late-Successional Reserves, stand treatments within the matrix, and protection for riparian corridors (aquatic and riparian lichens).”

This passage is typical of many of the references to ACS components in this section of the 1994 FSEIS. However, the FSEIS also concluded that other factors besides differences between its alternatives could affect anadromous fish:

“Two key points are important when considering the effects of any federal land management under each alternative on anadromous fish. First, there may be other factors such as overharvest, disease, and hatchery practices and other habitat impacts not related to timber harvest such as hydropower and

irrigation developments that have caused and will continue to affect the declines of anadromous salmonid populations. Second, a plan for managing federal lands will not necessarily correct problems on nonfederal land, and anadromous fish are, in many cases, adversely affected by nonfederal actions.”

This finding remains true under both No Action and the Proposed Action/Alternative A.

Chapters 3&4, pgs. 205 – 258: Species Not Threatened or Endangered

This section included repeated references to Riparian Reserves. Riparian Reserves would not change in any alternative.

Chapters 3&4, pgs. 259 – 260: Three Court-Identified Defects to the Forest Service 1992 FEIS

None of the alternatives would change how the agencies dealt with Court-Identified defects to the 1992 Forest Service FEIS.

Chapters 3&4, pgs. 261 – 318: Effects on Communities

As discussed in the ACS SEIS, the action alternatives are intended to provide the same mix of products and services as Alternative 9 in the 1994 FSEIS (as adjusted in individual RMPs). Current timber production is an indicator of the overall program; in terms of annual board feet sold, current federal harvest levels within the Northwest Forest Plan area are closer to Alternative 1 than Alternative 9. Effects of all alternatives are within the range described in this section.

In 2000, the Secure Rural Schools and Community Self-Determination Act was signed. Under the Act, counties within the Northwest Forest Plan area elected to receive a guaranteed level of payment, instead of payments that are a direct percentage of timber harvest receipts. Northwest Forest Plan FSEIS findings related to county payments may no longer be accurate. Other socio-economic effects from Alternative 1 still apply to No Action and other socio-economic effects from Alternative 9 still apply to both action alternatives.

Chapters 3&4, pg 319: Other Environmental Consequences

Implementation of the Proposed Action/Alternative A would not affect any of the analytic assumptions or conclusions of this chapter.

Chapters 3&4, pgs 319-321: Conflicts with Other Plans

Implementation of the Proposed Action/Alternative A would not affect any of the analytic assumptions or conclusions of this chapter.

Chapters 3&4, page 321: Irreversible or Irretrievable Commitments

Implementation of the Proposed Action/Alternative A would not affect any of the analytic assumptions or conclusions of this chapter.

APPENDIX C

PUBLIC COMMENTS and AGENCY RESPONSE SUMMARY



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Introduction

The agencies received approximately 1200 pieces of correspondence during the comment period for the Draft Supplemental Environmental Impact Statement (SEIS). Substantive comments were extracted from the correspondence verbatim and entered into a database. The comments addressed in this appendix were selected from the database to represent the full range of comments received. The representative comments are usually word for word quotes from the comment extracts. Grammar, spelling, usage, acronyms and jargon have not been corrected in these comments.

In this Appendix, the Proposed Action and Alternative A are referred to collectively as "the action alternatives" or "the proposed amendment."

Request for Comment Period Extension

Comment: We are writing to request an extension of the comment deadline for the Aquatic Conservation Strategy (ACS) Draft Supplemental Environmental Impact. We have extensive experience with Northwest Forest Plan implementation and are very concerned that the current deadline of July 10th does not allow adequate time for full consideration of the proposal.

Given that the Northwest Forest Plan is a complex, science-based strategy, we believe it is critical that a broad based and thorough analysis by a variety of interests and disciplines occurs regarding the proposed changes to the Aquatic Conservation Strategy before the Draft SEIS comment deadline expires. We do not believe that this can happen by the 10th of July, and the result may well be a problematic final proposal. We are requesting that the comment period be extended until September 1, 2003.

The changes proposed in the Draft SEIS are likely to have real on-the-ground and significant adverse impacts to aquatic systems. Any such changes require a full consideration of the implications, and this [takes] a lot of time.

There are also many other major changes to the Northwest Forest Plan and federal environmental laws that are being debated, proposed, and enacted by the administration and congress that diminish the ability of the public to comment on the Draft SEIS. This makes meeting the current deadline considerably more difficult since members of the public will need to consider and prepare comments for each of these separate proposals, as well as analyzing any combined impacts of these proposals.

All these significant policy changes occur at a time when the public has limited time due to increased commitments to children at home for the summer, longstanding vacation plans, and other responsibilities, including July 4th celebrations.

It appears that a settlement in the industry lawsuit regarding Oregon and California Railroad Lands is imminent. As you are probably aware, in some provinces falling within the Northwest Forest Plan area, these lands play a critical role in maintaining aquatic species. Any changes to the management of these lands will significantly affect the efficacy of the Aquatic Conservation Strategy. Thus we believe the best course of action would be to wait for any such settlement to occur before closing the comment period for the Aquatic Conservation Strategy Draft SEIS.

Response: *The agencies decided not to extend the comment period. The public had more than 90 days to comment on the proposal, which provided adequate time for review and comment on a 45-page Supplemental EIS.*

Comments about the Planning Process

Comment: I've attached my comment letter, and have printed it below. I attempted to fax it to the fax number (801) 517-1014, but that number is not receiving faxes. I do hope that is an oversight, and not merely an attempt to prevent comment letters from being received.

Response: *The fax number provided was valid. Many faxes were received at that number.*

Comment: The Draft SEIS stated that, "Documenting this analysis in an EIS is not intended to imply that there are significant effects to this amendment. An EIS was chosen as the vehicle to consider the language change so that all interested or affected people are provided opportunity to review and comment on the Proposed Action." This amendment will have significant effects, and were proposed in EIS form to avoid a court challenge on this basis. The public could just as easily have commented on an Environmental Assessment.

Response: *The agencies chose an Environmental Impact Statement as the vehicle to provide for widespread public review and comment. An Environmental Assessment would have provided a 30-day comment period, rather than a 90-day period. An Environmental Assessment would not have required publication of a Notice of Intent to Prepare an Environmental Impact Statement in the Federal Register (required for an EIS).*

Comment: Proposed changes to the Northwest Forest Plan...must be done through one SEIS, with a range of alternatives and an full environmental analysis, so cumulative and synergistic effects are taken into account for all proposed changes.

Response: *The agencies decided to prepare separate environmental documents for the two concurrent proposals to amend the Northwest Forest Plan (Survey and Manage SEIS and the ACS SEIS). CEQ regulations at 40 CFR 1508.25 9(a) discusses situations that warrant considering actions in a single EIS. The Survey and Manage decision will not trigger action on the ACS SEIS, nor will a decision on the ACS trigger action on Survey and Manage. Each project could proceed independently of the other. They are not interdependent parts of a larger action. The Draft SEIS discussed cumulative effects from both efforts; as stated on page 34, "the cumulative effects of proposed Northwest Forest Plan amendments are similar to effects analyzed in the 1994 Northwest Forest Plan FSEIS for Alternative 9. Neither proposal seeks to change the predicted outcomes of the Northwest Forest Plan."*

Comment: The administration has proposed major changes in NEPA documentation that will affect environmental analysis of land management projects in the Northwest Forest Plan area. Particularly important is the proposed to categorically exclude "hazardous fuels reduction projects" from NEPA. The proposed Northwest Forest Plan amendments must be considered along with all related proposed regulatory changes in one NEPA document because these and other proposed changes are all intrinsically linked.

Response: *The Final SEIS discusses proposed regulatory changes and discloses potential cumulative effects. The Final SEIS states that these are not connected actions that must be considered in a single EIS.*

Comment: What is the source of the agencies' power to delete language from a Record of Decision signed by a federal court judge and supported by FEMAT? It does not appear appropriate, and strikes me as a violation of the separation of powers, for federal executive branch agencies to propose amendments to a Record of Decision signed by a federal judge. That judge made his determination that the Northwest Forest Plan was legally defensible (i.e., adequately protected ESA species) only with FEMAT requiring site-specific application of the nine ACS objectives.

Response: *The judge did not sign the Northwest Forest Plan Record of Decision (ROD), the Secretaries of Agriculture and the Interior signed the document. Agencies are able to modify their plans in accordance with applicable policies, laws and regulations (the Northwest Forest Plan FSEIS and ROD discuss legal authorities for the decision).*

- Comment:** What's bothering me most is the fact that proposed timber rule changes in the Northwest Forest Plan are occurring with little if any open public debate. These changes seem very secretive and I do not see any public support for these changes. The public and field biologists did not ask for these changes to occur. The only support I see is coming from those institutions that will financially benefit from the changes . . . the timber companies.
- Response:** *The Proposed Action was circulated for scoping and 400 pieces of correspondence were received. The Draft SEIS was available for review and comment for more than 90 days and an additional 1,200 pieces of correspondence were received. These comments express range of opinions about the proposed amendment. See the section on Merits of the Proposed Action below for expressions of support.*
- Comment:** I personally sat and took valuable time out of my day - away from the youth I work with to personally craft this letter - it means so very much to me and I don't want some ridiculous Forest Service issue of not accepting letters generated by organizations as templates for public opinion.
- Response:** *All letters were reviewed for substantive comments. All substantive comments are summarized in this section.*
- Comment:** The Draft SEIS, page 4, states: "This SEIS supplements information in the Northwest Forest Plan Record of Decision and Final SEIS. It is not intended to re-evaluate decisions or effects analysis in the Northwest Forest Plan or the information provided by 1993 Forest Ecosystem Management Analysis Team (FEMAT) report." A supplemental EIS should not contradict what the original EIS says. This SEIS undermines some of the core elements and analyses of the 1994 Northwest Forest Plan FEIS so these issues must be reconsidered in full, not merely as a supplement.
- Response:** *Regulations about Supplemental EISs are at 40 CFR 1502.9 (c) "Agencies shall prepare supplements...if...the agency makes substantial changes in the Proposed Action that are relevant to environmental concerns." This Supplemental EIS considers whether the changes to language in the ACS are relevant to environmental concerns. The Supplemental EIS also considers whether there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. The proposed amendment is not intended to undermine the core elements of the ACS, rather both alternatives specifically retain all components including Key Watersheds, Riparian Reserves, Watershed Analysis and Watershed Restoration.*

Comment: The U.S. Forest Service and the Bureau of Land Management need to do more research to determine if timber harvesting impacts water quality and hydrological patterns before any consideration can be done to exclude this land use from the Aquatic Conservation Strategy.

Response: *The agencies are not proposing to exclude consideration of timber management projects in light of the ACS. The agencies are proposing to clarify the documentation needed to demonstrate compliance with standards and guidelines that refer to the ACS, including standards and guidelines related to timber management.*

Comments about the Adequacy of the Supplemental EIS

Comment: [EPA] has conducted [an EIS] review in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. We have rated the EIS, LO (Lack of Objections).

Response: *Discussions within the Final SEIS were edited and expanded in response to comments received by the EPA (and other organizations and individuals) during the 90-day comment period.*

Comment: This Affected Environment section adequately describes the existing regulatory environment, the ACS, and agency decision making that may have affected lands within the Northwest Forest Plan area since the 1994 ROD. This section should also more fully describe existing data on the present condition of natural resources since implementation of the Strategy. Such information might include number, types and distribution of timber sales, restoration projects, fuel treatments, road maintenance or closures, and other timber or forest management actions. Additional information might include comparison of data from the pre-ROD period with current data for indicators of aquatic ecosystem health as water quality, water temperature, presence or abundance of salmonids in salmon bearing streams, or other parameters that may be barometers of forest health in the Northwest Forest Plan area.

Response: *Additional analysis has been added to the Final SEIS to respond to this comment. Monitoring programs are summarized in the Final SEIS and the Biological Assessment (Appendix D).*

Comment: Please make two separate effects disclosures. One for fuel reduction involving brush and small trees that does not require road work and is unlikely to trigger ACS concerns, and make another for projects involving large scale commercial extraction of medium and large trees that will require road construction and be much more likely to raise ACS concerns.

Response: *"Commercial extraction" may be integrated with hazardous fuel reduction projects so separate effects disclosure would not be possible or accurate. See further discussion in the section on the integration between vegetation management and watershed restoration.*

Comment: We acknowledge that the monitoring period for the ACS has been too short to demonstrate effects and that it is very difficult to assess impacts of this proposed action or compare it to the effects of not taking action. The discussion of cumulative impacts, however, could be clearer about the predicted biological and physical impacts of implementing the clarification of language. In order to assess the adequacy of the cumulative impacts assessment, five key areas should be considered. The cumulative effects analysis should: 1. Identify resources if any, that are being cumulatively impacted; 2. Determine the appropriate geographic (within natural ecological boundaries) area and the time period over which the effects have occurred and will occur; 3. Look at all past, present, and reasonably foreseeable future actions that have affected, are affecting, or would affect resources of concern; 4. Describe a benchmark or baseline; 5. Include scientifically defensible threshold levels. Using this framework, it might be possible to estimate increase in projects that might occur by examining the number of projects done since implementation of the Northwest Forest Plan ROD (since this is a supplemental EIS, looking at all past actions would not be required) and the number of known reasonably foreseeable projects completed and not completed, an estimated difference in impact acreage could be a starting point for discussion of effects. You may then determine how predicted impacts compare to benchmarks established during development of the Northwest Forest Plan and compare how these impacts may or may not exceed important threshold levels for aquatic resources.

Response: *The 1994 FSEIS discussed cumulative effects of the alternatives across the Northwest Forest Plan area. The ACS SEIS considers results of that analysis in light of potential changed conditions since 1994, new listings under the Clean Water Act and Endangered Species Act, achievements in implementing the ACS across the Northwest Forest Plan area and concurrent programmatic or regulatory proposals currently being considered, along with the language change.*

Comment: The 1994 FEIS and this SEIS both fail to address threatened salmon as individual species with individual life history characteristics. Now that the salmon are listed, this SEIS must do what the 1994 FEIS failed to do.

Response: *Appendix D contains a Biological Assessment (BA) with further information about listed fish species.*

Comment: The Draft SEIS does not clarify what a legitimate application of the ACS will be when considering whether a sale should go forward in a particular watershed.

Response: *Under all alternatives, land managers are required to demonstrate that projects comply with applicable standards and guidelines. Under the proposed amendment, land managers would be required to document their consideration of the effects of projects in the context of the condition of the fifth-field watershed in which the projects will occur.*

Comment: The proposed action provides no language "clarifying" how to separate out those projects that will merely trash the habitat in the short-term from those that will contribute to continued degradation over the long run too. While the proposed changes are promoted as a "fix" that would allow the approval of projects ultimately beneficial to the overall health of the ecosystem, these same changes could also lead to the approval of projects whose negative impacts far outweigh their benefits.

Response: *The National Environmental Policy Act (NEPA) requires decision-makers to complete environmental analysis to weigh the positive and negative effects of projects. The National Forest Management Act and Federal Lands Policy and Management Act require agencies to comply with standards and guidelines in Resource Management Plans. Agencies are also required to comply with environmental laws such as the Endangered Species Act, Clean Water Act and Clean Air Act. Given these requirements, projects are unlikely to have negative effects that outweigh positive effects.*

Comment: While the Draft SEIS asserts that progress toward meeting the ACS objectives will be assessed at watershed and broader scales, Draft SEIS at 3, it offers no viable mechanism for doing so.

Response: *The Final SEIS discusses how agencies use watershed and other broad scale analysis to provide the context needed for project planning under the ACS. The Aquatic Riparian Effectiveness Monitoring Plan (AREMP) provides a monitoring strategy to assess progress toward attainment of ACS objectives across watersheds in the Northwest Forest Plan area.*

Comment: Where is the identification in the ACS or SEIS of all of the keystone species of the ecosystem - including microbes, fungi, and insects - and their habitat requirements? An analysis that does not include the factors essential for the survival of the entire ecosystem cannot be adequate.

Response: *The Northwest Forest Plan FSEIS considered soil organisms, fungi and insects. The proposed amendment will not change findings related to these species (see Appendix B for further discussion).*

Comment: Currently, the Northwest Forest Plan ROD, p. B-6, states that: "Stand management in Late-Successional Reserves should focus on stands that have been regenerated following timber harvest or stands that have been thinned." In contrast to this Standard and Guideline, Section C (ROD, Attachment A, p. C-12) states only that "(t)hinning (precommercial and commercial) may occur in stands up to 80 years old regardless of the origin of the stands (that is plantations planted after logging or stands naturally regenerated after fire or blowdown). Removing the Standards and Guidelines from Section B could have significant effect on LSRs and yet there is no analysis provided for such effects.

Response: *These statements are not mutually exclusive and both apply to projects within Late-Successional Reserves under all alternatives. Alternative A was developed to retain paragraphs referring to all of Attachment A as "standards and guidelines," and would not "remove the standards and guidelines for Section B."*

Comment: Please add the following to the list of restoration projects on page 35: prescribed fire, underplanting, snag and down wood management, invasive weed control, grazing control, OHV control, etc.

Response: *These activities were added to the types of restoration projects in the Final SEIS. Additional types of projects were also added.*

Comment: Geomorphic change is decades of boredom punctuated by hours of chaos when a really big storm hits. During those hours, more sediment and other changes occurred to the landscape than occurred in the previous 3 decades. These major events are rare enough that a researcher may not witness one in his entire career. The SEIS must assess these factors.

Response: *The Northwest Forest Plan FSEIS discussed catastrophic disturbance events and their effects on ecosystems. The likelihood of disturbance events was addressed in the size, number and distribution of Late-Successional and Riparian Reserves. Events that have occurred since 1994 were considered in the Draft SEIS (Appendix E).*

Comment: Another unstated assumption that must be disclosed and tested is that application of standards & guidelines alone will ensure attainment of ACS objectives. The briefing paper that accompanied the Notice of Intent for this ACS SEIS says: "The framers of the ACS have agreed that site-specific projects designed consistent with the aquatic standards & guidelines found in Section C and D are, by definition, consistent with the ACS..." This statement is missing from the SEIS, but the issue has not gone away. It is now just an unstated and highly questionable assumption underlying the analysis.

Response: *This statement was not included in the Draft SEIS because it did not fully acknowledge the role of watershed analysis in following the ACS. Scoping information led to inclusion of language about watershed analysis and its role in providing context for project planning in the Proposed Action. Alternative A contains similar language. The 1999 Regional Ecosystem Office memorandum stated that, "the standards and guidelines in Section C do not by themselves always guarantee that actions will be consistent with ACS objectives, in part because of the need for Watershed Analysis." The proposed amendment is consistent with the intent of the Regional Ecosystem Office memorandum.*

Comment: The ACS SEIS did not consider the role of climate change (i.e., global warming), which would dictate less logging to retard global warming and compensate for higher stream temperatures (B-16).

Response: *Global warming was considered in the Northwest Forest Plan FSEIS, specifically on pages 3&4-192-193. The proposed amendment does not invalidate the findings about global warming in the Northwest Forest Plan FSEIS (see Appendix B). Riparian Reserve standards and guidelines ensure that stream temperatures will not be increased as a result of management activities on federal lands.*

Comment: The Draft SEIS states that more than 400 letters, faxes, and e-mails were received from a wide variety of parties. Yet the Draft SEIS only provides short, incomplete, perfunctory and conclusory statements to justify the proposed changes. Where are the responses to the numerous comments and the analysis required under the APA to justify the proposed alternative? "Every issue that is raised as a priority matter during scoping should be addressed in some manner in the EIS, either by in-depth analysis, or at least a short explanation showing that the issue was examined, but not considered significant for one or more reasons." Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping, 46 FR 25461.

Response: *Scoping comments were reviewed and issues were identified and discussed. Scoping comments were discussed on pages 10-12 and in Appendix C of the Draft SEIS. Additional scoping and public involvement records are in the analysis files.*

Comment: The DEQ data as to water quality trends is meaningless without knowing the location of the monitoring stations (are they adjacent to federal forest land?)

Response: *Water quality is monitored both on and off National Forests and lands administered by the BLM. Monitoring conclusions were included in the Draft SEIS. These conclusions are based on information in the monitoring reports cited. These reports included the locations of the monitoring stations. Streams are influenced by conditions on all land ownerships.*

Comment: On page 31 of the Draft SEIS. Page 202 of the Northwest Forest Plan FSEIS is misquoted, and makes no sense.

Response: *There was a typographical error within this citation in the Draft SEIS. The paragraph has been corrected in the ACS Final SEIS to read:*

"...the [Aquatic Conservation] strategy can succeed at maintaining and restoring aquatic and riparian habitats regardless of what happens on non-Federal lands, but that would not ensure the population viability of many of the fish stocks evaluated in the SEIS. For these reasons, it is not possible to determine whether any of the alternatives in the SEIS would preclude listing of fish species under the Endangered Species Act."

Comment: Appendix B needs to be proofread and edited. Page B-14 is unintelligible.

Response: *Appendix B has been edited within the ACS Final SEIS.*

Comment: The DEIS is inadequate in that it fails to state, either here or elsewhere in the entire document, including the appendices, what the nine ACS objectives are. How can a reviewer possibly decide which alternative is best (i.e., site-specific or watershed application), without knowing what objectives are to be applied?

[Re:] pp. 15-19: It is impossible to understand or evaluate the environmental impact of the proposed language deletions and additions out of context with the pertinent sections of the ROD; thus, this DEIS is inadequate in that respect.

Response: *The cover letter attached to the Draft SEIS provided a contact for obtaining copies of the full Northwest Forest Plan Record of Decision (including the ACS objectives). For the convenience of the reader, the nine ACS objectives are included as part of the BA in Appendix D.*

Comment: The summary is contradictory. It states that "Decision makers must design projects to follow the ACS," but that progress need be evaluated only at the watershed or larger scales. These two directives are contradictory.

Response: *The agencies do not agree that the two concepts noted are contradictory. The ACS SEIS explains why the proper scales for federal land managers to evaluate progress toward achievement of the ACS objectives are the watershed and broader scales. The proposed amendment retains all components of the ACS.*

Comment: What do the Forest Service, Bureau of Land Management, and the Department of Interior consider to be "relevant information" that is in the proposed language of Page C-2? This issue of relevant information is the very point that has been a source of confusion within agency management before and after creation of the Northwest Forest Plan. It would be essential for any proposed amendment to clarify this term. Failing to provide the necessary analysis and information is a violation of the APA. 5 U.S.C [SEC] 706(2)(A).

Response: *The 1995 Federal Guide for Watershed Analysis describes information provided by watershed analysis that is relevant to project-level decision-making. These descriptions are referenced in the Final SEIS and specific language in the Preferred Alternative A.*

Comment: [Re:] PCFFA II order, 9/30/99. Judge Rothstein's order was appealed to the Ninth Circuit Court, which affirmed her holding. The DEIS is inadequate since it does not include the text of the Ninth Circuit Court opinion.

Response: *For the convenience of the reader, Appendix A (in this ACS Final SEIS) includes the published 9th Circuit Court opinion.*

Comment: The Forest Service and BLM have failed to demonstrate that the agencies have developed alternative means to protect listed aquatic species, and to prevent the federal listing of additional species under the Endangered Species Act, 16 U.S.C. [Sections] 1531-1544 (1994) (ESA). Furthermore, the agencies have yet to articulate how they propose to protect and restore watersheds without the tenets of the ACS.

Response: *The agencies are complying with the Endangered Species Act and have initiated consultation regarding listed fish species (see Appendix D). The tenets of the ACS (Key Watersheds, watershed analysis, watershed restoration, and Riparian Reserves) remain intact in all alternatives. Protecting the habitat of these species on the federal forest lands in the Pacific Northwest may not prevent these species from being listed under the Endangered Species Act. These species are affected by many other factors such as harvest, ocean conditions, water impoundment projects, disease and competition from other species.*

Comment: I am writing to tell you I strongly oppose the proposed weakening of the Northwest Forest Plan's Aquatic Conservation Strategy (ACS). I have read the Draft SEIS carefully and object to the inclusion of so many weasel words (may, might, should, could, ought, ask, involve, call for, desire, perhaps, expect, trust, believe, maybe, possibly, to the extent practicable) that make protection of the Pacific Northwest's streams, aquatic wildlife and forests essentially discretionary.

Response: *The proposed amendment is not intended to weaken the ACS or make protection of the forests discretionary. The proposed amendment would not invalidate effects predicted for Alternative 9 in the Northwest Forest Plan (see Appendix B in this ACS SEIS for more information).*

Comment: The title of the Draft SEIS, "Clarification of Language in the Record of Decision for the Northwest Forest Plan" understates the significance of potential impacts.

Response: *The title of the SEIS is not intended to understate the significance of impacts that could occur under the proposed amendment.*

Comment: NEPA requires the agencies to assess the environmental consequences of its actions, but the USFS and BLM have failed to do so here. Consequently, the Draft SEIS is inadequate and must be withdrawn until sufficient environmental analysis is completed.

Response: *Environmental consequences are discussed in Chapters 3&4 of this Final SEIS. The EPA, FS and BLM do not agree the EIS is inadequate.*

Comment: The Draft SEIS (Page 18, Proposed Action) states: "To follow the ACS at the site-scale, decision makers must demonstrate that projects comply with standards and guidelines in Sections C and D." The Draft SEIS continues, "The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for the design and site-specific assessment of the project...." NOAA Fisheries recommends that these two passages be augmented to more clearly delineate the role of watershed analysis, in conjunction with the standards and guidelines, in ensuring consistency with the ACS and thus attainment of the ACS objectives over time. The final wording in this section of the SEIS should provide a clearer discussion of the role of ACS objectives within the context of the overall strategic plan (ACS), as well as the role of watershed analysis and the standards and guidelines in assuring ACS consistency at the project level relative to the relationship between project design and assessment and attainment of ACS objectives. We recommend that this discussion (possibly with examples of how project-level ACS consistency would be ensured under the proposed action) be included in the Final SEIS. NOAA Fisheries staff is available, and would be pleased to work with the ACS EIS team in developing this discussion.

Response: *Preferred Alternative A was developed to clarify documentation requirements in the proposed amendment. Discussions in the Final SEIS and Biological Assessment (Appendix D) are intended to clarify these passages.*

Comment: Without any clear rationale, the Draft SEIS removes most of the Standards and Guidelines that are essential to the implementation of the ACS. The agencies must clarify the status of all of the rules and standards that are located in sections A, B, D, and E of the ROD.

Response: *All of Attachment A remains management direction to be followed in all alternatives. This direction would not be nullified or voided in any alternative. Some people expressed concern that the text of the Proposed Action could render that direction "unenforceable." Alternative A specifically retains certain passages that would have been removed by the Proposed Action to respond to this public concern.*

Comment: The DEIS should indicate what timber harvest rates have been on non-federal lands within the Plan area since 1994.

Response: *As incorporated into the Draft SEIS, Page 3&4-82 of the Northwest Forest Plan FSEIS found: "The success of the strategy does not depend on actions on nonfederal lands. Many of the federal watersheds occur upstream of nonfederal watersheds. Thus, the strategy can succeed at maintaining and restoring the aquatic and riparian habitats independent of actions on nonfederal lands." Page 2-7 of the 1994 Northwest Forest Plan FSEIS stated: "...impacts from expected management activities on nonfederal lands were considered as part of the cumulative effects analysis in this SEIS in accordance with the requirements of NEPA." Page 3&4-6 stated: "The future harvest levels on nonfederal lands are also expected to be similar under all alternatives. The amount and character of timber harvest activity on nonfederal lands in the first decades are similar under all 10 alternatives. Thus, the management of, and the changes in habitat on, nonfederal lands are not expected to be significantly affected by selection of any of the 10 alternatives in this SEIS." No further analysis is necessary.*

Comment: The proposed changes would clearly allow substantially higher logging levels than currently exist, since logging projects would not have to comply with the current protections in riparian reserves and key watersheds. The DEIS even admits that the changes are designed to bring logging levels up to the original PSQ (see DEIS pp. 39-40), which would be an annual increase of several hundred million board feet. Yet the DEIS (p. 40) fails to honestly acknowledge this, and claims that there is no way to know what the effects will be on logging levels. This violates NEPA. The government must disclose the extent to which the changes would increase logging levels, even if a rough estimate is required. Otherwise, the DEIS fails to meet the "hard look" standard of NEPA.

Response: *None of the alternatives are intended to "allow substantially higher logging levels" than predicted under Alternative 9 in the Northwest Forest Plan. All projects must comply with standards and guidelines described in Resource Management Plans. None of the alternatives are intended to change the way projects are designed or analyzed. Rather, the action alternatives are intended to remove expectations that are impossible to meet while planning projects that follow Northwest Plan principles. This is only one factor of many that influence federal timber sale programs.*

Given the underlying assumptions related to current interpretations of the ACS language, over the long-term No Action would not be able to sustain current PSQ estimates. The proposed amendment is intended to help agencies achieve the PSQ associated with Alternative 9 (as adjusted in individual RMPs). The effects of implementing Alternative 9 were disclosed in the 1994 Northwest Forest Plan FSEIS.

Comment: The Draft SEIS page 33 states, "This effects analysis supplements findings within the Northwest Forest Plan and its Final SEIS. Discussions about the Affected Environment and the Environmental Consequences of the ACS and Northwest Forest Plan are not repeated, but are incorporated by reference." The contents of the 1994 FSEIS must be briefly described. 40 CFR 1502.21

Response: *Appendix B briefly described findings in the Northwest Forest Plan FSEIS incorporated into this SEIS.*

Comment: The Draft SEIS states: "If the Proposed Action results in increased vegetation management and watershed restoration activities, risk of adverse short-term, site-level impacts would increase proportionately to the amount of work implemented [SEIS p. 42]." Please disclose the consequences of this increase in terms of the life-histories of each individual aquatic species of management interest including all listed aquatic species and survey and manage species.

The Draft SEIS states: "Predicted effects are described in the Northwest Forest Plan FSEIS [SEIS p. 42]." The 1994 EIS address only 7 "groups" of fish. Now that so many fish are listed under the Endangered Species Act, the agencies must present species-specific information and analysis.

Response: *The Biological Assessment in Appendix D contains information about fish species listed under the Endangered Species Act within the Northwest Forest Plan area.*

Comment: The Draft SEIS states: "The potential adverse effects to aquatic and riparian habitats include: risk of increased sedimentation from disturbance from road work and logging operations, risk of effects to peak flows from canopy removal; and risk of loss or degradation of wildlife habitat [SEIS p. 42]." These are serious effects that are inconsistent with the ACS objectives. The disclosures that you have presented here are less detailed and informative than even an average Environmental Assessment, but this is an EIS and requires much more detailed and comprehensive analysis.

Response: *The portion of the Draft SEIS referenced in this comment characterized the type of effects that would be considered in site-specific effects analysis for a given project. This is a Supplemental EIS to an existing analysis; the detailed analysis you expect here is in the 1994 Northwest Forest Plan FSEIS and associated documents, or will be described subsequently in site-specific environmental analysis for projects.*

Comment: Endangered Species Act consultation strategies are referred to on page 21 of the supplemental EIS. We believe improved consultation is essential to timely implementation of the projects. Since the EIS relies on new approaches to consultation as "an assumption common to both alternatives," it would be helpful to more clearly describe the new consultation approaches in the Supplemental EIS.

Response: *The relevant assumption about the new consultation process is that it will not rely on findings of consistency with ACS objectives as a surrogate for Endangered Species Act jeopardy analysis.*

Comment: Multiple documents: FEMAT, the Northwest Forest Plan ROD, the S&G's, and the Programmatic BiOp all unequivocally state that the ACS must be implemented at all four spatial scales. The current claim that such a clearly stated goal needs clarification is a falsity by the current Administration to re-prioritize the current Northwest Forest Plan to provide more opportunity for commercial logging.

Response: *The proposed amendment retains elements of the ACS that apply to various spatial scales. Project-specific standards and guidelines in Section C relative to Key Watersheds and Riparian Reserves are the same in all alternatives. The proposed amendment would not re-prioritize" the Northwest Forest Plan. The interpretation that created the need for this clarification confused the components of the ACS, which are implemented at various scales, with the objectives of the ACS, which are attainable at watershed and broader scales. Chapter One includes ACS citations that support the agencies' interpretation of the role of ACS objectives.*

Comment: The table on page 26 is in no way supported by data or actual facts. It is only an insufficient assumption of what agencies want to happen based on the proposed amendments.

Response: *Analysis in Chapter 3&4 in the ACS Draft SEIS supported the table on page 26. As discussed in the Draft SEIS, agencies are unable to predict the extent to which the proposed amendment will result in increased success implementing projects that follow Northwest Plan principles.*

Comment: The Draft SEIS notes that "in the short-term, delaying or avoiding projects could have some positive benefits on the physical and biological environment, since the risk of short-term adverse effects from the projects would be reduced or eliminated." Draft SEIS, 41. The Draft SEIS also states that: "The environmental consequences of the alternatives are highly speculative. The effects of No Action are particularly uncertain because the current language contains ambiguities that can be misinterpreted. The agencies believe that this language needs to be amended to clarify the ACS, but cannot quantify to what extent the amendment will result in increased implementation of projects needed to follow Northwest Forest Plan principles." Id. at 34.

These passages are the sum total of the agencies' analysis of the positive effects of the no action alternative, as well as the direct and indirect effects of the proposed action, and is inadequate under NEPA. We believe that the no action alternative will have many beneficial effects on the planning area, including maintenance of clean drinking water, species viability (both listed and nonlisted species), habitat improvement, and recreational opportunities. However, none of these effects are mentioned in the Draft SEIS. We also maintain that the action alternative will have adverse consequences that are quantifiable, but were unaddressed in the Draft SEIS. As a result, the agencies' NEPA analysis is inadequate, and the Draft SEIS must be withdrawn.

Response: *The Final SEIS includes further discussion about the effects of the No Action alternative. Current timber harvest levels have been closer to levels associated with Alternative 1 in the Northwest Forest Plan FSEIS than levels predicted for Alternative 9. Benefits of Alternative 1 were described in the Northwest Forest Plan FSEIS.*

Comment: The restoration discussion is an example of incomplete analysis. It is recognized that timber harvest generally degrades watersheds and that much restoration work is necessitated by past logging. It is expected that timber harvest levels will increase if the Proposed Action is implemented. Therefore, to justify the claim that more restoration will be accomplished under the Proposed Action than under No Action, the discussion would have to allow for the extra restoration work needed due to increased timber harvest under the Proposed Action.

Response: *Timber harvest may have beneficial and adverse effects (effects are disclosed in site-specific NEPA analysis). Timber harvest projects may provide opportunities or funding to accomplish restoration. The Northwest Forest Plan as a whole is intended to maintain and restore habitat for species associated with late-successional and old-growth forests. The proposed amendment would not change this overall goal.*

Comment: Several commenters remarked that the Draft SEIS did not appropriately use the term "tiering." They stated that the Proposed Action amends the Northwest Forest Plan, therefore it cannot tier to its FSEIS.

Response: *The Draft SEIS used the term "tiering." This SEIS "supplements" the Northwest Forest Plan FSEIS (Supplemental EIS' are discussed at 40 CFR 1502.9). "Tiering" has specific meanings that are distinct from "supplementing." These terms are used correctly in the Final SEIS.*

Comments about the Purpose and Need for Action

Comment: [The EPA finds that] the Purpose and Need chapter has clearly established the underlying need; there is more than adequate background information describing the present difficulties with language in several portions of the ACS. This language has resulted in the interpretation that even small projects with long-term benefit which result in minimal, short-term site disturbance could be delayed because they could be seen as inconsistent with the Strategy. The discussion in the EIS makes it clear that this was not the lead agency's intent in crafting the Strategy. This chapter, however, needs a more specific statement of purpose that addresses the underlying need. The purpose statement show on Page 10 is quite general. We believe that a clearer, but still concise purpose statement in this chapter would place clear boundaries on the action and help set an appropriate range of alternatives for consideration and analysis in the EIS.

Response: *The Purpose and Need section was edited in the Final SEIS. The agencies believe the Purpose and Need places clear boundaries on the action and sets an appropriate range of consideration in the Final SEIS.*

Comment: The Draft SEIS indicates that the central rationale for removing Standard and Guideline status from most of the ROD is to remove this status from the ACS objectives. Although the Draft SEIS quotes a statement in the Northwest Forest Plan FSEIS that the ACS objectives "do not meet the definition of standards and guidelines and thus, are not included (in the S&G section)," this apparently was not the final judgment of the EIS team or decision makers since the whole ROD was designated as Standards and Guidelines. Draft SEIS, p. 10, citing Northwest Forest Plan FSEIS, p. 166. In fact, the ACS objectives are the critical standards to be met by the strategy.

Response: *As discussed in the Draft SEIS, the ACS objectives are not (and were never intended to be interpreted as) standards.*

Comment: The ACS is not a roadblock to legitimate restoration. In fact, it's working to help restore real places in real watersheds. See the attached list of examples of "tangible places restored" by the proper application of the ACS. Note also that the Siuslaw National Forest recently received a "triple crown" of Forest Service awards in recognition of their ability to get things done on the ground. Dale Bosworth, Chief of the Forest Service, honored the Siuslaw Forest with the "Breaking Gridlock", "Natural Resource Stewardship" and "Rise to the Future" awards.

The SEIS must explain why the Siuslaw Forest is so successful even under the requirements of existing ACS. Given that the Siuslaw Forest manages more miles of anadromous fish streams than any forest in the Northwest Forest Plan area, the ACS problems described in the SEIS should be worse here than anywhere else, yet here on the Siuslaw they are getting awards for breaking the gridlock. This runs counter to virtually everything the SEIS is saying. This success is being realized not only in stream and road restoration but also in their timber program which in FY 1998 made more money than any other forest in the national system and they did it mostly by thinning younger stands, whereas the nearby Willamette National Forest was trying to log more old-growth and they were largely unsuccessful and LOST more money (~\$30 million) than any other forest in the nation. Given these facts, how can the analysis in the SEIS be accurate?

Draft SEIS statements are not based on actual past incidents or on any documented history of the management actions or attempted management actions to date under the Northwest Forest Plan. The statements in the Draft SEIS are without merit and are creating a false scenario to create an appearance that the Northwest Forest Plan prevents effective ecosystem restoration. Where in the area of the Northwest Forest Plan have such restoration projects been halted?

It appears that any misapplication of the ACS occurred as a result of the government misunderstanding or misconstruing the PCFFA litigation, not the PCFFA litigation itself.

Not only were restoration projects explicitly excluded from the injunction in PCFFA I, but dozens of restoration projects have been completed in Washington State that comply with the ACS including: Excelsior Chinook Acclimation Project, Finney Instream Project, North Fork Nooksack Large Woody Debris Project, Mt. Baker Instream Restoration, Skiyou Island Habitat Restoration, Tye River Watershed Restoration, Midnight Creek Stream Project, White River Road Decommissioning, Whitechuck Rd.#23 Road Relocation, Finney Ck. Road Treatments, Beckler Watershed Road Decommissioning, and South Fork Snoqualmie Road Decommissioning on the Mt. Baker-Snoqualmie National Forest; the Church Creek Road Decommissioning, Cedar Creek Road Decommissioning and Stabilization, Upper Dungeness Road Decommissioning, Calawah Mainstem In-stream projects, Quinault Roads Decommissioning, Falls Creek Channel Project, Chester Creek Large Woody Debris Project on the Olympic National Forest; and Trout Creek Channel Restoration, Wind River Channel Restoration, Wind River and Dry Creek Channel Restoration, Panther Creek Restoration, West Fork Lusk Creek Restoration, East Fork Lewis River Fish Habitat Restoration, Rush Creek Channel Restoration, Cispus/Iron/Yellowjacket Creek Restoration, Smith Creek Restoration, East Creek Flood Repair, Little Nisqually Flood Repair, Packwood Flood Repair, and Randle Flood Repair on the Gifford Pinchot National Forest.

Numerous young stand treatments that might have short-term impacts at the site level, but long-term benefits have also completed NEPA analysis and comply with the ACS including Dark Canyon Thin, Divot Thin, Dry Jackpot Thin, Crayon Thin, Cispus Thin, Heli-Tower Thin, Iron Summit Thin, Johnson Thin, Lava Fiber Thin, Tower Thin, and Lower Iron Thin on the Gifford Pinchot National Forest; Satsop Thin, Boundary Thin, Triton Thin, Harris Thin, Big Shrew Thin, Mouse Thin, Split Thin, Two-Y Thin, Pit Thin, Overpass Thin, Donahue Forks Thin, and Matheny South Thin on the Olympic Peninsula; and White River Thin, I-90 Thin, Finney AMA Thin, Forgotten Thin, and North Zone Thin on the Mt. Baker-Snoqualmie National Forest. The view that the ACS is unworkable does not apply to National Forests in Washington State, and such statements should be retracted as incorrect, misleading, and considerably biased. Such statements have no place in a Purpose and Need Statement.

Response: *The Draft SEIS did not intend to imply that the ACS is a roadblock to all projects everywhere. Some projects have been challenged based on a misapplication of the ACS (see Chapter 1 in the SEIS for case citations). The agencies do not base their interpretation of management direction depending on the popularity of individual projects; such an approach would introduce an element of arbitrariness into the decision-making process.*

Comment: As stated in the Draft SEIS, the current management interpretation of the Northwest Forest Plan meets neither the letter nor the intent of Option 9 of the Northwest Forest Plan chosen by President Clinton. In applying the current management practices, the agencies are more closely following Option 1, which was deliberately not chosen by the administration in power at that time. Dr. Jack Ward Thomas, lead scientist on the FEMAT team that produced the Northwest Forest Plan, stated on June 23 that the agencies are not applying the management plan correctly and are not meeting the intent of neither the plan nor the government.

Response: *The agencies agree with this characterization.*

Comment: If the agencies cannot quantify to what extent the amendment will result in increased implementation of Northwest Forest Plan principles, then there is no demonstrated need for the amendment.

Response: *The agencies have had difficulty achieving desired harvest levels partly because of the misapplication of ACS objectives. The Final SEIS states No Action is expected to result in continued low harvest levels more like Alternative 1 in the Northwest Forest Plan FSEIS. The need for action is discussed in Chapter One of the ACS SEIS.*

Comment: The Draft SEIS states that current interpretations hinder Federal land managers' ability to plan and implement projects needed to achieve Northwest Forest Plan goals [SEIS p. 4]. In reality, it is not all goals that are hindered but timber harvest and associated road construction which harm fish that is hindered. Furthermore, the timber harvest goal was qualified by the expectation that the "health of forest land" would be "preserved" and timber sales would "not degrade or destroy the environment."

Response: *The Draft SEIS stated that the purpose of the project was agency success in planning and implementing projects that follow Northwest Forest Plan principles, including timber sales that would not degrade or destroy the environment. Many commenters have stated their assumption that any project that includes logging within late-successional or old-growth stands of timber or will, by definition, "degrade or destroy the environment."*

The Northwest Forest Plan Record of Decision discussed why the Secretaries of Agriculture and the Interior selected Alternative 9, which specifically included timber sales within late-successional and old-growth stands. Clearly, the authors of the Northwest Forest Plan did not share the assumption that timber harvest and road work automatically degrade/destroy the environment. An ironic result of PCFFA v. NMFS is that Federal timber sale planners have become reluctant to include restoration work in proposed timber sale projects if the restoration work may result in disturbance to aquatic or riparian habitats and triggers the need for Endangered Species Act consultation. In many cases, the adverse effects described in the PCFFA sales were from actions such as culvert replacement that would have resulted in long-term benefits to the environment.

Comment: Please disclose that the primary limitation on timber stand improvement and legitimate fuel reduction is NOT the ACS, but rather funding limitations. The staff on the vast Middle Fork District of the Willamette National Forest says that they could thin 4,000 acres of dense young plantations per year for the next 20 years, but they are not funded to do it. Their young stand thinning projects are not limited by the ACS but by agency and Congressional priorities.

Response: *Funding decisions are beyond the scope of this SEIS. Resource Management Plans describe programs of work. The portion of the program of work is funded each year. One of the reasons funding falls short for vegetation management treatments is that the complex array of project planning requirements. The agencies cannot tolerate continued ambiguity and impossible expectations in attempting to fund projects needed to achieve Northwest Forest Plan goals.*

Comment: While one of the objectives of the Northwest Forest Plan was to provide a sustainable supply of timber, it was only one of four goals related to the Plan. In choosing to amend the ACS, the USFS and BLM have placed an inappropriate emphasis on timber production - only one of the goals of the Northwest Forest Plan - rather than on achieving all of the goals of the Plan.

Response: *The proposed amendment is intended to increase agency success planning and implementing projects that follow Northwest Forest Plan principles. Timber sale volume is one indicator of agency success. The Northwest Forest Plan does not emphasize timber production over other goals, rather the Northwest Forest Plan reduced timber production on lands administered by the BLM and FS by about 80 percent compared to past levels.*

Comment: The nine objectives of the Aquatic Conservation Strategy are stated on page B-11 of the 1994 ROD. Nothing in that section states or implies that the objectives are to be applied or complied with strictly at the watershed scale.

Response: *The ACS SEIS explains why the proper scale for evaluating progress toward attainment of ACS objectives is the fifth-field watershed scale and broader scales. This information is reflected in the 1995 Federal Guide for Watershed Analysis, Dr. Reeves' declarations and reports in Appendix A and F, excerpts included in the Background of the ACS section of the ACS SEIS, and in the wording of the proposed amendment.*

Comment: There is simply no way that the agencies can clearcut mature forest and "maintain" watershed conditions. The problem lies with the agencies' refusal to let go of destructive timber sales and road construction projects that degrade watershed conditions and impact aquatic habitat. The problem appears to originate in the unrealistic Probable Sale Quantity (PSQ) that the draft SEIS claims should be met.

As long as the agencies are mandated by Congress to maintain certain timber production targets, there will be problems with environmental consequences of sales that must contribute to those target goals but do not meet environmental criteria of protecting the watersheds. The Northwest Forest Plan speaks of producing "a predictable and sustainable supply of timber...that will not degrade or destroy the environment." It does not say that timber sales must go forward if they are proven to have adverse environmental impacts...The goal must be the sustainable and predictable level of recovery of the health of the ecosystem and water quality, and in particular the sustainable and predictable level of recovery of its most threatened members such as salmon.

Response: *The Northwest Forest Plan included a goal of sustainable harvest that does not destroy the environment (paraphrased). The Secretaries decided this goal would best be met through Alternative 9, partly because this alternative: "is the best alternative for providing a sustainable level of human use of the forest resource while still meeting the need to maintain and restore the late-successional and old-growth forest."*

Comment: The 1994 EIS used the term "standards and guidelines" broadly, while this SEIS uses the terms quite narrowly, i.e., standards & guidelines are not just parts C and D of Attachment A to the 1994 ROD but the whole document. This EIS must disclose the import of this difference.

Response: *The Proposed Action was modified (Alternative A) to respond to this comment. Preferred Alternative A would not remove paragraphs that state that all of Attachment A comprises standards and guidelines. Alternative A contains language to clarify the difference between project-specific standards and guidelines and other types of management direction.*

Comment: The fact that timber harvests are less than expected does not create a "need" to change the Northwest Forest Plan, since a particular harvest level was not legally required. The "need" is to protect ESA species, and if this means a lower PSQ, so be it. The Northwest Forest Plan did not guarantee business as usual, but rather called for adaptive management. The agencies blame the 35 percent attainment of the PSQ on "appeals and protests on individual projects" as well as "enjoined biological opinions." This blame is misplaced. The problem is poorly planned timber sales that would have a detrimental impact on riparian/aquatic resources if they proceeded, and the continued decline of these species. Many of the PCFFA v. NMFS sales were outrageous, and should have been challenged in the courts. The worst sales have been permanently enjoined, and the others released. The agencies' current inability to meet PSQ is attributable to timber sale design and the continued decline of Northwest Forest Plan species, especially those dependent on LSRs and Riparian Reserve habitat.

Response: *The "need" is for increased success planning and implementing projects that follow Northwest Forest Plan principles and contribute to achieving its goals. As stated in the Northwest Forest Plan Record of Decision (page 25), Alternative 9: "responds to multiple needs, the two primary ones being the need for forest habitat and the need for forest products." The Northwest Forest Plan was never intended to be a "species recovery plan." Recent settlement of the O&C lawsuit reaffirmed that the agency has a need to achieve timber harvest levels closer to those predicted for Alternative 9.*

The statutory direction for management of O&C lands requires the BLM to offer a certain level of harvest once an allowable cut is declared (See 43 USC § 1181a). No sales were "permanently enjoined" in the PCFFA v. NMFS litigation, nor was the quality of BLM and FS sale planning at issue in that litigation. None of the sales caught up in this litigation violated any project specific standard and guideline. In many of these sales, the "degrading" activity that triggered the need for consultation was restoration work (such as culvert upgrade) associated with the projects.

Comment: We find it particularly disturbing that the proposed action redefines the role of ACS objectives, demoting them to the role of "context for project planning." Clearly, the ACS objectives are intended to delineate the broad mandate of the ACS as a whole. It seems obvious to us that any project that falls under the scope of this mandate should be expected to meet the stated objectives. It appears that the Forest Service (and the various extractive industries) are proposing these changes simply because they find the existing rules too burdensome.

Response: *The agencies agree that: "ACS objectives are intended to delineate the broad mandate of the ACS as a whole." None of the alternatives intend to "demote" this role.*

Comment: Unlike logging old forest, restoration projects have countervailing benefits that allow them to proceed. This SEIS must reconcile its narrow-minded view that both restoration and logging have equal effect with the repeated statements in the record before and after the Northwest Forest Plan indicating the analytical utility of weighing short-term and long-term impacts and potential benefits of restoration and logging. "...watershed restoration assessment will identify restoration goals and provide a risk assessment showing that benefits outweigh the risks of proceeding with a project." (1994 ROD page 57).

Response: *Nothing in the proposed amendment eliminates the NEPA requirement that decision makers consider the risks and benefits of projects. Alternative 9 in the Northwest Forest Plan FSEIS was intended to provide a sustainable, predictable level of timber harvest. According to many of the public comments received on the ACS Draft SEIS, timber harvest within native forests (especially old-growth) never have "countervailing benefits" and thus should never occur. The Northwest Forest Plan FSEIS, ROD and associated record does not support this contention.*

Comment: The Draft SEIS states: "The current wording of the ACS has been interpreted to preclude timber sales such as these that may result in minimal impact to aquatic and riparian habitat [SEIS p. 8]." Yes, but "minimal impact" is not the same as "maintain and restore." As recognized by Judge Rothstein and the 9th Circuit, even "minimal impacts" can seriously harm threatened or endangered salmon. This passage also forgets to mention that logging old forests (and associated road building) outside the riparian reserves can have cumulative watershed effects that can directly and adversely impact aquatic resources through peak flows and loss of large woody material.

Response: *This comment and others assert that timber harvest within late-successional and old-growth can never meet the ACS, thus demonstrating the very problem with ambiguity that the agencies are trying to solve. The agencies did not select Alternative 1 in the Northwest Forest Plan FSEIS (which would have avoided such harvests) partly because it would not have provided a sustainable PSQ to meet the socio-economic needs articulated in the 1994 Record of Decision. As stated in the Northwest Forest Plan Record of Decision (page 26): "The need for forest products from forest ecosystems is the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies, and contribute valuable resources to the national economy, on a predictable and long-term basis...Alternative 9 in the Final SEIS is the best alternative for providing a sustainable level of human use of the forest resource while still meeting the need to maintain and restore the late-successional and old-growth forest."*

Comment: There is no evidence in the record, or elsewhere to our knowledge, that anybody has ever asserted that the ACS requires any single site-scale project to "fully attain" all of the ACS objectives. In fact, since such attainment is a physical impossibility it is unclear why the Draft SEIS must clarify this point. However, while it may be true that no site-scale project can "fully attain" the ACS objectives, a single project can certainly be inconsistent with meeting these objectives at the site and/or watershed scale, and if so the ACS clearly prohibits that project.

Response: *The agencies agree that no evidence in the record suggests that the ACS was intended to require site-scale projects to fully attain the ACS objectives. However, this is exactly what was asserted by plaintiffs and apparently accepted as an interpretation of the Northwest Forest Plan by the courts in the PCFFA v. NMFS litigation. This interpretation has necessitated this amendment to clarify documentation requirements associated with the ACS.*

On page C-31, Attachment A to the Record of Decision for the Northwest Forest Plan stated: "standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives." This means that compliance with standards and guidelines (given the context provided by analysis at broader scales) is intended to assure that projects will not retard or prevent attainment of ACS objectives. The proposed amendment emphasizes the role of watershed analysis in providing appropriate context for project planning as required by the ACS.

Comments Specifically Related to the PCFFA Lawsuits

Comment: In addition to inadequate analysis of the effects of the proposed ACS amendments on the Northwest Forest Plan, misinforming the public about a legal case to provide justification for broad scale changes to the Northwest Forest Plan is not valid under NEPA. The Draft SEIS includes only one of a series of three decisions in the PCFFA cases. Action agencies have incorrectly used such court decisions as a scapegoat to justify this unnecessary amendment process. However, there is no discussion of PCFFA I, which upheld the ACS under the ESA based on the agencies' promise that every project would meet the ACS objectives. Such analysis was to serve as a check on the discretion within the ACS to pursue projects that could degrade aquatic habitat. Now, action agencies want unfettered discretion, which runs counter to such assurances provided in prior litigation and is in conflict with the purpose of the Northwest Forest Plan.

In Pacific Coast Federation of Fishermen's Associations v. NMFS, the issue was whether NMFS adequately evaluated the action agencies' compliance with the ACS in reaching its "no jeopardy" conclusion. PCFFA, 71 F. Supp. 2d 1063, 1069 (W.D. WA. 1999).

The court found that (1) NMFS failed to adequately assess the short-term impacts of the timber sales and failed to adequately explain its assumption that passive restoration will adequately mitigate the adverse impacts of logging; (2) that NMFS failed to use watershed analysis to determine whether the watersheds at issue were in the acceptable range of variability and thus NMFS had not fully or sufficiently incorporated watershed recommendations into its ACS analysis; (3) and that NMFS permitted violations of ACS riparian reserve standards where there was no evidence of a rational connection between the proposed action and the attainment of ACS objectives.

Response: *The Draft SEIS effects analysis is adequate and accurately portrayed recent court opinions. Plaintiffs in subsequent litigation (cited in the Draft SEIS) have now asserted that single projects must fully attain all ACS objectives at all spatial scale levels and are citing as support the PCFFA decisions.*

The intent of the Final SEIS is not "unfettered discretion," rather the agencies seek clear and attainable documentation requirements.

Given the difficulties experienced in the PCFFA litigation, NOAA Fisheries (formerly NMFS) will no longer rely upon ACS consistency in order to make Endangered Species Act section 7 jeopardy determinations on land management projects proposed in the Northwest Forest Plan area.

Comment: The district court concluded that NMFS violated the ESA and the Northwest Forest Plan by arbitrarily and capriciously issuing biological opinions that contradicted scientific evidence. The court had determined that the "long-term/watershed approach" to jeopardy determinations meant that NMFS had virtually guaranteed that no timber sale would ever jeopardize the UR cutthroat trout or the coastal salmon. As a result, the district court enjoined the sales. "By employing a long-term/watershed approach in making jeopardy determinations, NMFS has virtually guaranteed that no timber sale will ever be found to jeopardize the continued existence of the Oregon coastal coho or Umpqua river cutthroat trout." *Id* at 1073.

With the current proposed amendments and flawed Draft SEIS analysis, action agencies are attempting, via regulatory amendments, to make such flawed analysis the standard, legal means of managing public lands. The Ninth Circuit decision quoted a very relevant section of the ACS that the Draft SEIS now

proposes to delete in order to accommodate proposed logging projects that would have severe detrimental effects to the ecosystem. PCFFA, 265 F.3d 1028 (9th Cir. 2001) The Ninth Circuit quoted the Northwest Forest Plan by stating that the "agency also must determine 'how the proposed project or management action maintains the existing condition or moves it within the range of natural variability.'" Id at 1036, quoting ROD B-10. Such a management approach goes to the heart of the Northwest Forest Plan and the Draft SEIS is clearly extracting it in order to detract from responsible land management. As the FEMAT states, "spatial and temporal connectivity within and between watershed is necessary for maintaining aquatic and riparian ecosystem functions." (Naiman et al. 1992).

The Draft SEIS states that the "ACS has been interpreted to mean that every project must achieve all ACS objectives at all spatial and temporal scales." The Draft SEIS does not cite any source for this assumed requirement because it is misinformation. Such a binding requirement does not exist. To the contrary, the District Court, in PCCFA specifically states that "NMFS is also correct that evidence in the checklists and matrixes that a project will result in some degradation does not, standing alone, constitute ACS noncompliance."

However, what the Northwest Forest Plan or other federal statutes does not permit which occurred in the cases leading to the PCCFA decisions was agency action that permitted "violations of ACS riparian reserve standards where there was no evidence of a rational connection between the proposed action and the attainment of ACS objectives." 71 F.Supp.2d 1063, 1073. Now, because the 9th Circuit has disallowed the agencies to permit numerous timber sales without adequate analysis of the effects of such sales on aquatic ecosystems, the Forest Service and the BLM are implementing these proposed regulatory changes in order to allow arbitrary and capricious behavior.

The Draft SEIS complains that the PCFFA litigation would prohibit any actions that have short-term impacts, even if they have long-term benefits. This is the basis of the assertion that the "misapplication" has blocked restoration projects. The courts never made an over-arching pronouncement disallowing activities that legitimately have only short-term localized effects. Instead, they cast doubt on the agencies' characterization of large-scale clearcut logging as having only short-term localized effects when it takes 25-30 years for trees to provide sufficient cover to regulate the flow of precipitation and when such logging affects runoff and flows beyond the location of the logging. The PCFFA litigation never challenged restoration activities. In fact, when the district court issued a preliminary injunction in PCFFA III, it was the agencies that stopped restoration activities under the guise of that injunction. The PCFFA plaintiffs immediately objected and the judge immediately clarified that neither the case nor the court's order stopped restoration activities. The fact that the agencies

have lumped restoration and harmful logging activities together caused some restoration projects to be tied up, but the agencies' feigned "confusion" over whether restoration activities themselves are prohibited by the PCFFA litigation is disingenuous. Again, the agencies never tried to comply with PCFFA II and III. Instead, they threw up their hands, claiming that they could not distinguish between clearcut logging and restoration activities to comply with the court rulings. They cite no rulings or even passages to support this absurd proposition.

Response: *The District Court invalidated NOAA Fisheries' ACS consistency analysis process in PCFFA II. The Ninth Circuit Court of Appeals affirmed the District Court. NOAA Fisheries utilized the same ACS consistency analysis process for all land management projects (i.e., for timber sales and restoration projects alike). Therefore, the type of project at issue is not the proper inquiry, because it was NOAA Fisheries' analysis process itself that was found to be arbitrary and capricious. No sales planned under the Northwest Forest Plan are "large-scale clearcuts."*

Additionally, the Draft SEIS explained the relationship between watershed restoration projects and timber sales. The Final SEIS provides further information about the integration of different types of projects. In many cases, timber sales provide the opportunity to accomplish restoration work that otherwise would not be funded. These types of projects overlap; many projects that accomplish forest management (e.g., fuels reduction) or watershed restoration (e.g., thinning in Riparian Reserves) also include an element of commercial harvesting.

Comment: Agencies such as the Roseburg BLM have been able to do more logging projects using restoration thinning silviculture practices as a result of the PCFFA litigation. This type of logging is necessary because much of the land in Douglas County is in the Coastal Mountain Range, and was clearcut 50 years ago. The thousands of acres of managed plantations today are at the age where thinning was planned and needed. Before the PCFFA litigation, instead of focusing on this needed thinning, BLM was busy converting more mature and old-growth forests to new plantations, even though there are very few mills left that need the larger sized logs. One result of the PCFFA litigation was to move the direction of BLM toward the needed thinning -- projects that have a short window (10 years or so) of opportunity for logging to be effective for forest health. Currently, we support BLM's efforts in projects like the Upper Umpqua Watershed Plan that propose to provide local workers and mills with up to 125 million board feet of timber. This incredible restoration project is a result of the Oregon BLM interim guidance. Without the clarification of the ACS that resulted from the PCFFA litigation, this project would likely not happen, and the thickly planted, old plantations would continue to stagnate without the same level of needed thinning. This reality is vastly different than the effects described in the Draft SEIS.

These needed thinning projects, which otherwise would not have happened on the current scale, are not a misapplication of the ACS.

Response: *Plantation thinning has always been part of the set of activities envisioned under the Northwest Forest Plan. However, harvest levels associated with Alternative 9 (as adjusted in Resource Management Plans) cannot be achieved over the long-term without harvest within older forests.*

Comment: The court found that NMFS is required by the Northwest Forest Plan to ensure ACS compliance at all four spatial scales. Its decision to measure ACS compliance only at the watershed level and its failure to evaluate ACS compliance at the project or site level, therefore, were found arbitrary and capricious. This ruling applies to the FS and BLM as well as NMFS.

In PCFFA I, Judge Rothstein held that NMFS could not rationally reach a "no jeopardy" conclusion in reviewing the agencies' site-specific biological opinions without analyzing site-specific compliance with the ACS. In PCFFA II, the same plaintiffs challenged four Biological Opinions issued by NMFS on the impacts of 24 federal timber sales. These sales, considered as a whole, lumped together good, bad, and truly ugly projects and included many which would have degraded habitat conditions at the project or site-specific level. The NMFS Biological Opinions, in finding "no jeopardy", stated that "there would be no ACS violation until the culminated degradation caused by individual projects is measurable at the watershed level." (p. 13).

Judge Rothstein struck down the watershed-only compliance scheme, and thus the Biological Opinions, agreeing with plaintiffs that this spatial level analysis would mask the impact of any individual timber sale, and ignore the near-term impact on fish. She stated that the FEMAT report constituted the "best available scientific information", and that NMFS was therefore required by law (16 USC Section 1536(a) (2) to follow that report in its Biological Opinions. As interpreted by the judge: FEMAT stressed (and indeed this court held in its prior decision) that the ACS strategy must be implemented at all four spatial scales: regional, province (river basin), watershed, and site (or project)...Thus, not ~ must the ACS objectives be met at the watershed scale (as NMFS argues), each project must also be consistent with ACS objectives...(p. 15). Judge Rothstein also ruled that failure to consider short-term impacts of the projects constituted "arbitrary and capricious" conduct by NMFS.

The Proposed Action herein is a direct attempt by BLM and USFS to overturn this District Court's interpretation of FEMAT. However, the DEIS presents no scientific information to overturn FEMAT and its requirement for site-specific application of the ACS objectives--no watershed data, no data on affected species

-- probably because there is none to support a watershed-only approach. Therefore, the DEIS tries to reinterpret FEMAT to serve its own purposes, contrary to the court decisions. This it cannot do with any legal force.

Response: *The agencies have proposed limited changes to language in the Northwest Forest Plan Attachment A to better reflect agency intent in land management. NOAA Fisheries (formerly NMFS) no longer relies on ACS consistency to make Endangered Species Act determinations for fish. The Draft SEIS discussed the relationship between this ruling and the proposed amendment. The Final SEIS includes further discussion about why the appropriate scale for evaluating progress toward attainment of ACS objectives is the fifth-field watershed and broader scales.*

Comment: The Draft SEIS gives a very selective and incomplete portrayal of logging at issue in the PCFFA cases and fails to disclose that logging can seriously harm salmon and their habitat. The Draft SEIS asserts that the timber sales at issue in the litigation had minimized roadbuilding, employed yarding mitigation, and had only short-term, localized sediment impacts usually due to road removal or maintenance activities that have long-term benefits. It further asserts that the current wording of the ACS has been interpreted to preclude sales that have only minimal aquatic impacts. Draft SEIS at 8.

As discussed above, PCFFA II actually challenged large clearcuts that denuded the landscape, exacerbating peak flows, intensifying runoff, and increasing sedimentation. The agencies identified these impacts at the site scale, but found them never to be problematic because they did not aggregate the impacts from past activities and other sales. Instead, they looked across an entire fifth field watershed, ten or more years into the future, and predicted that the number of acres of trees removed would not have a measurable effect at the watershed scale. As the Ninth Circuit held, this approach ignored very real cumulative effects and the harm to several generations of salmon that would occur before the time frame assessed by the agencies. The Draft SEIS similarly skirts over the very real effects of the logging at issue.

Response: *The agencies disagree with your portrayal of these sales as large clearcuts denuding the landscape. Whether the disturbance in the watershed vegetation cover and the consequential affect on hydrology by the sales would be outside of the range of natural variability can only be ascertained at watershed levels and over longer time intervals. The Draft SEIS provided reasons why progress toward achievement of ACS objectives is most appropriately evaluated at fifth-field watershed or broader scales. The court's concern in the PCFFA II litigation was whether the jeopardy analysis was overlooking possible short-term impacts to the listed fish population by relying on a finding of ACS consistency that only concerned itself with watershed level effects over long time intervals. The Draft SEIS stated that NOAA Fisheries (formerly NMFS) will no longer rely upon ACS consistency in order to make Endangered Species Act section 7 jeopardy*

determinations on land management projects proposed in the Northwest Forest Plan area. Site-specific and cumulative effects on fish will be considered in Endangered Species Act section 7 consultation.

Comment: Your statement on p. 8 that "the timber sales covered by the invalidated biological opinions minimized construction of roads" is at odds with what I've witnessed ...where roads are plotted through stands of forest in such a way as to require the harvest of most of the larger trees just to make way for construction.

Response: *Federal land managers comply with agency policies when planning new roads. No agency policies suggest that roads be routed to remove the largest trees. The Northwest Forest Plan requires land managers to minimize the need for road construction and to route roads to avoid riparian areas as much as possible. The project records for the timber sales covered by the invalidated Biological Opinions in the PCFFA litigation support the agency contention that these projects minimized road construction.*

Comment: The Court in PCFFA I agreed with NMFS that "evidence in their checklists and matrixes that a project will result in some degradation does not, standing alone, constitute ACS noncompliance" and that "the Programmatic Biological Opinion does anticipate some harmful activities under the Northwest Forest Plan." 71 F. Supp.2d 1063, (W.D. Wash. 1999). Thus it was not the Court's view that all ACS objectives had to be met at all spatial and temporal scales...There is simply no evidence that the current interpretation is that "(a)ny project that may result in site-level disturbance to aquatic or riparian habitat, no matter how localized or short-term, could be precluded under this interpretation." Restoration projects moved forward from the PCFFA litigation and NMFS has been approving others with concurrence letters.

Response: *The Draft SEIS accurately portrayed recent court decisions. The Final SEIS provides further information about types of projects that may have been stopped or delayed as a result of misinterpretations of the existing ACS language. As discussed in Chapter One of the SEIS, the irony of the PCFFA litigation is that restorative actions (such as culvert replacement) are the very actions that caused the localized, short-term disturbance that caused the potential adverse effect on fish.*

Comment: We believe that what the Draft SEIS is presenting as an interpretative problem is actually the Court understanding the Northwest Forest Plan language, citing it, and stopping projects that were out of compliance, while other projects were allowed to go forward. Further, the problem in the PCFFA litigation was not somebody's unrealistic expectations for the ACS at multiple scales, rather the problem was that NMFS had not shown how it was requiring ACS compliance at any scale.

Response: *The ACS SEIS explains why the agencies believe that the current language has been misinterpreted. The proposed amendment clarifies information needed to demonstrate compliance with the ACS. This clarification is intended to improve agency success in planning and implementing projects that follow the Northwest Forest Plan principles.*

Comments about Integration of Vegetation Management and Restoration

Comment: The agencies have not demonstrated a link between watershed restoration funding and monies derived from commercial timber harvest. Contracting for the commercial timber sale program requires the return of any money generated from timber sales directly to the U.S. Treasury. That money then may or may not be reallocated to watershed restoration, or, as has occurred historically, to additional timber sale preparation and implementation. We agree with FEMAT that a comprehensive watershed restoration program is required to reverse the effects of decades of mismanagement. FEMAT, V-J. Consequently, we believe that because watershed restoration is expensive and not based on commodity output, Congress must directly appropriate funds for this worthwhile work. We point out that in the 1970s and 1980s - when the timber harvest level reached its peak - restoration funding was almost nonexistent, which belies the agencies' contentions here. To claim that the lack of commercial timber harvest - due to the implementation of watershed protections - has resulted in little watershed restoration is disingenuous. Basing a decision on baseless information is arbitrary and capricious. 5 U.S.C. [SEC] 706(2)(A).

Response: *The agencies integrate projects as much as possible. Integrated projects are efficient because they take advantage of opportunities to meet a variety of needs. Road rehabilitation, fuel hazard reduction, and forest health improvement are examples of actions that can occur within a timber sale contract.*

Comment: With respect to restoration projects, there is a need to decouple them from sales which cause riparian/aquatic degradation in the first place, most likely by decoupling the funding mechanisms. To the degree that implementing these restoration projects is the "Purpose and Need" for the language changes, there is

no rational relationship between better ACS restoration efforts and the Proposed Action, which will allow worse degradation to occur in order to allow restoration projects elsewhere...Any confusion that has arisen is self-imposed by the agencies, not ACS language, and is caused by their continuing to link very destructive timber sales with restoration projects.

p. 35-37. If restoration projects do not proceed as they should at present, it is not because they cause short-term damage to aquatic/riparian environments in violation of site-specific ACS objectives. It is because they are tied to timber sales destined to cause more damage to aquatic/riparian areas, in violation of the ACS and therefore challenged by environmental groups, salmon fishermen or others. The Proposed Action will allow these damaging sales to proceed, using funds derived thereby to restore damage from previous sales. This makes no sense and will result in less, not more watershed restoration.

If restoration projects were decoupled from sales they would provide employment for those experienced with working in the woods. As needed as the restoration projects are, I would prefer that they not proceed so long as they are tied to timber sales that cause greater damage.

Taking into account that BLM and USFS services are supported by timber receipts (including restoration projects), and evaluated accordingly (see BLM Information Bulletin), these agencies would likely attempt to design sales such as those in PCFFA I and PCFFA II, using exceptions to the Standards and Guidelines in order to get at timber within the reserves.

The statement "At least some watershed restoration projects... might not be implemented" (under No Action) is too qualified to demonstrate a real need for the Proposed Action. The "No Action" discussion (p. 36) describes the real problem (restoration projects tied to timber sales), and therefore the real solution. Fund restoration projects separate from timber sales, and the projects will actually have an overall positive effect on the watersheds.

If active restoration is less under the No-Action alternative, it is because of funding mechanisms and proposed sales that damage riparian/aquatic areas, not the difference in the alternatives.

Response: *As discussed in the Draft SEIS and the BLM Information Bulletin in Appendix A, agency decision makers are "encouraged to accelerate the balanced implementation of the Resource Management Plan and Northwest Forest Plan, utilizing timber sales as a treatment tool...as an appropriate treatment necessary to accomplish ACS...objectives as identified in watershed analysis..." This is not considered a problem, since it provides opportunities to achieve multiple objectives with integrated projects. The agencies considered an alternative that would "decouple" timber sales from other types of projects (this alternative is eliminated from detailed study in the Final SEIS).*

Comments about the Range of Alternatives

Comment: On page 21, the Draft SEIS states: "The Need for Action substantially limits the range of reasonable alternatives available for analysis and provides a relatively narrow scope for this action." The agencies probably think this is a neat little trick they have to manipulate the purpose and need in order to limit the scope of alternatives, but the public finds it offensive, and a judge will probably find that it violates the spirit and intent of NEPA. The courts have also held that in defining a very narrow purpose and need, the agencies run afoul of NEPA...An agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency's power would accomplish the goals of the agency's action, and the EIS would become a foreordained formality. *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991).

Response: *The scope of a project is defined by the context and intensity of potential environmental effects. Since this is a limited change in language intended to improve agency success in following an existing plan, the scope of the alternatives is necessarily limited.*

Comment: The Draft SEIS lacks a reasonable range of alternatives. In particular, Oregon Natural Resources Council suggested that the Forest Service and BLM consider protecting all mature and old growth forests. On page 21 of the Section "Alternatives Considered but Eliminated from Detailed Study," the EIS states that an alternative (No Cutting or Removal of Trees Older Than 80 years) was eliminated because it does not respond to the Need for Action. However, it remains unclear why the lead agencies believe this would not respond to the need for action. Other reasonable alternatives included adding mitigation measures to ensure ACS consistency on restoration projects, and streamlining beneficial restoration projects. *Id.* at 23.

Another alternative is to implement the ACS as stated in the Northwest Forest Plan as clarified by the Rothstein Court in the PCFFA litigation. This DEIS also re-examines the overall strategy of the Northwest Forest Plan in light of lower than expected timber harvests, and proposes amending the ACS portion of the Plan. Thus, it cannot fairly dismiss other alternatives that also propose to amend the plan on that basis. The agencies should consider additional alternatives if for no other reason than to inform the public and other cooperating and commenting agencies so they are better able to make informed comments and recommendations to the decision-maker. The Secretaries are not supposed to decide in a vacuum. They should be deciding based in part on the concerns and comments of informed agencies and an informed public. We are just not as smart as the Secretaries, so please humor us, and consider some more alternatives that can highlight some of the significant issues. Consider it helping the public to help the Secretaries.

Response: *The ACS SEIS discusses alternatives considered but eliminated from detailed study. The range of alternatives considered includes those that are dismissed from detailed study. The agencies considered a modified Proposed Action (Alternative A) to respond to issues of concern to the public.*

Comment: The Draft SEIS states that the ONRC alternative would be similar to Alternative 1 in the Northwest Forest Plan Final SEIS, which was not selected for implementation. Alternative 1 in the 1994 FEIS did not allow silviculture in reserves. It even forbade thinning in dense young planted stands. This alternative however does allow thinning in dense young stands in the reserves, which changes the analysis considerably from that of Alternative 1. Due to the prohibition on thinning, the 1994 EIS gave Alternative 1 poor marks for both timber production and recovery of old-growth. This alternative will accomplish all of the agencies' objectives and it will accomplish these objectives with much more certainty than the Proposed Action.

We believe that the SEIS should not only consider an alternative that eliminates logging of mature and old-growth forests, but one that emphasizes the restoration of the millions of acres of plantations and previously logged young-growth forests that are most in need of thinning, fuels reduction, and other restoration activities.

This new forest management paradigm has something for everyone: it would protect our last best forests, it would create thousands of jobs through thinning and other restoration activities, the huge controversy associated with logging old forests would be greatly reduced, agency planning efforts would be streamlined; timber volume (as a by-product of restoration) will actually be higher than the amount of timber volume available under the highly- contentious old-growth logging regime, and the regional economy would benefit from improved "ecosystem services" provided by a forest that is both protected and restored. We request that the SEIS adequately address and fairly consider all of these objectives.

Response: *A wide range of alternatives was considered in the Northwest Forest Plan FSEIS. The Secretaries of Agriculture and the Interior could have decided to implement an alternative that blended aspects of Alternative 1 (such as no commercial harvest in mature stands) and aspects of Alternative 9 (silviculture allowed in reserves). They decided to implement Alternative 9. The ACS SEIS considers alternatives to increase agency success planning and implementing projects that achieve goals of Alternative 9. The "ONRC" alternative would not increase agency success in achieving the goals of Alternative 9.*

The 1994 Northwest Forest Plan ROD did include the lack of restoration silviculture within reserves as a reason why Alternative 1 was not selected. The No Action alternative considered in the ACS SEIS would not reflect Alternative 1 in this regard. However, the current level of timber harvest is more similar to harvest levels associated with Alternative 1 than 9.

Comment: An alternative eliminated from detailed study would have streamlined procedures for planning and implementing restoration activities, while leaving the existing language intact for logging, mining, and other extractive activities. This may be a good idea, and should be considered a reasonable alternative. It makes sense as a way to implement the "maintain and restore" language in the Northwest Forest Plan ROD. Projects that "restore" (such as culvert removal or road obliteration) are more valuable and get a little more leeway, while projects that lack restorative qualities (like old forest logging) only maintain (or even risk degrading) should get more scrutiny. The Draft SEIS states that: "It would lead to further confusion over which standards apply in the case of connected actions such as culvert upgrades associated with a timber sale haul route."

This example is slightly challenging but can be sorted out by examining the underlying purpose of both the log hauling and the road. If the road is a major travel way (like a two digit forest road) and the log hauling is incidental to other dominant uses, then the culvert upgrade could be considered restoration to prevent future blowouts or improve passage at a intentional and necessary

road/stream crossing. If the log hauling is necessary for legitimate plantation restoration or fuel reduction, and consideration has been given to alternate routes and methods of log removal, then the culvert upgrade can be considered part of the restoration project. If the logging is a commodity timber sale and if the road is mainly a log haul road that has limited other uses, the road should probably be decommissioned and the culvert removed rather than have the culvert replaced.

In discussion of the Streamline Procedures for Planning Restoration Activities, the EIS states, "Applying different approaches to the ACS to different types of projects has no valid rationale and would not resolve ambiguities within the current language." There appears to be a rationale to apply different approaches to different types of projects: restoration projects differ sharply in purpose from logging and extractive activities and may be more likely as a group to meet the long-term goals of the ACS. This alternative, however, may be better characterized as being unworkable because restoration activities are often incorporated as parts of extractive projects, and extractive and restoration activities might also be equally unlikely to avoid short-term impacts at the project site scale. Therefore, we suggest removing the words, "has no valid rationale and . . .". We also recommend explaining in a little more detail why you have not chosen this alternative to analyze in the EIS.

Response: *This comment resulted in modification to discussions about the "Streamline Procedures" Alternative in the Final SEIS. The Final SEIS now states that, "This alternative was eliminated from detailed study because it does not address the underlying need for action, which is to follow Northwest Forest Plan principles and achieve its goals. Alternative 9 was selected within the Northwest Forest Plan partly because it provided higher amounts of timber than some other alternatives. This alternative would put impossible expectations on logging (and other "non-restoration") projects because short-term disturbance would not be allowed. The ACS was never intended to regulate or prohibit these projects outside Riparian Reserves and Key Watersheds.*

Comment: Association of Oregon Counties and the Association of O & C Counties do not believe that the proposed editorial changes to selected portions of the ACS as set forth in the preferred alternative in the Draft SEIS meet the minimum threshold requiring preparation and consideration of a SEIS. Because the proposal is simply to make clear the original intent, there should be no environmental impact that has not already been addressed in the NEPA analysis conducted in 1993-94. Presumably, the NEPA analysis completed by the agencies at that time took into account the agencies' intended application of the ACS. AOC and the Association of O & C Counties believe that an EA would have satisfied the NEPA requirements for this proposed action. For this reason, we believe that the analysis in the Draft SEIS is more than sufficient. We are concerned, nevertheless,

that the Draft SEIS only addresses two alternatives, the no action alternative and the preferred alternative. We suggest that the final EIS should consider additional, alternative language options, each of which would achieve the same goal of restoring the original intent regarding application of the ACS.

Response: *A modified Proposed Action (Alternative A) is included in the Final SEIS.*

Comment: We are concerned that the preferred alternative may not fully achieve its intent, the elimination ambiguity regarding application of ACS goals. The agencies' proposed language attempting to clarify that a project does not have to comply with ACS objectives needs to be more forceful and explicit. To address the issue we recommend the changes below to the proposed language. These changes are designed to further clarify and eliminate ambiguity.

ROD. p. b-10. para.. 2:

"The four components of Aquatic Conservation Strategy (Riparian Reserves, Key Watersheds, watershed analysis and watershed restoration), in combination with application of pertinent standards and guidelines, are expected to maintain and restore ecosystem health in the long-term at the watershed and broader scales. No site-scale project can, or should be expected to achieve ACS objectives. To follow the ACS at the site-scale, decision makers must only demonstrate that projects comply with standards and guidelines in sections C and D. References to ACS objectives in the standards and guidelines in Sections C and D do not require that decision makers find that site-scale projects will attain ACS objectives."

ROD. p. C-2 , insert after paragraph 2:

"Some standards and guidelines refer to attaining, being consistent with meeting, or achieving ACS objectives. The intent of these references is that projects will use relevant information from applicable watershed analysis to provide context for project planning. These references do not mean that decision makers must find that a site-scale project will necessarily attain, be consistent with, or meet ACS objectives."

Response: *These alternatives were considered but eliminated from detailed study because the wording suggestions are almost exactly the same as the Proposed Action.*

Comment: No more logging plans should be permitted, and existing ones should be suspended, until the long-term consequences can be comprehensively assessed, especially in sensitive places such as old-growth, areas that have not recovered from damage caused by past logging, and anywhere slopes are steep or unstable.

The overriding criteria for all rules must be that they are not fixed but are contingent on the health of the salmon and other threatened species.

Response: *The Northwest Forest Plan FSEIS considered a range of alternatives for federal land management within the Northwest Forest Plan area. Alternative 9 was selected. It does not contain a mitigation measure such as that suggested. Such an alternative would not address the purpose and need for action. Site-specific environmental analysis addresses the long-term consequences of logging plans.*

Comment: The Draft SEIS recognizes (page 49) that large forest openings cause peak flows to increase in streams during the wet season and decreases flows in streams during the dry season. Regeneration harvests degrade the watershed also by risking additional sediment delivery into streams by landslides or road use. The Draft SEIS simply says these effects will be "mitigated". Instead, the Draft SEIS should have considered an alternative that avoided, not mitigated the degrading effects. The results of mitigation can only be evaluated years later, when it is too late. The entire basis of Ecosystem Management is to avoid degrading effects. In fact, the Northwest Forest Plan warns (B32) that mitigations like in-stream structures must not be a replacement for poor forestry practices. It also says "Do not use mitigation or planned restoration as a substitute for preventing habitat degradation." (C-37)

Response: *Regeneration harvesting outside reserves may have effects such as those discussed in the Draft SEIS. These effects would be evaluated as a part of project-specific NEPA analysis. By selecting Alternative 9, the Secretaries of Agriculture and the Interior documented their intent to develop projects that follow Northwest Forest Plan principles. Avoidance of all degrading effects is an impossible standard to meet. All of the Final SEIS alternatives are consistent with the Northwest Forest Plan ecosystem management principles.*

Comment: We suggest that all the language in the ROD regarding watershed analysis be left in place, and the following text (underlined) added as a Section C watershed analysis standard and guideline: Watershed analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed. Once a watershed analysis is completed for a watershed, the project record for each project proposed in that watershed will demonstrate how the management activity is consistent with each of the Aquatic Conservation Strategy objectives, including a finding that the proposed project or management action maintains the existing condition or moves it within the range of natural variability.

If the Draft SEIS is hoping to convey that not all ACS objectives can be fully achieved at the site-scale, something with which we fully agree, we recommend

that all of the language in the ROD be left fully intact and that the language proposed underlined below be added: While some objectives can only be fully achieved at a watershed or landscape scale, each project must be analyzed for its consistency with each Aquatic Conservation Strategy objective, and must be found to be consistent with the standard specified in the Standard and Guideline (for example, must "attain" or "not retard or prevent attainment.") The analysis must culminate in a synthesized conclusion of overall ACS consistency that considers all of the ACS objectives relevant to a given action. (ROD, p. B-9). The intent (of the ACS) is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives. While some objectives can only be fully achieved at a watershed or landscape scale, each project, including projects or portions of projects not located within Riparian Reserves or Key Watersheds, must be found to be consistent with the ACS objectives. Projects that would retard or prevent attainment of these objectives would not comply with the ACS. The analysis must culminate in a synthesized conclusion of overall ACS consistency that considers all of the ACS objectives relevant to a given action. (ROD, p. B-10 (proposed for deletion by the Draft SEIS at p. 18)).

Response: *The Final SEIS discusses this type of alternative (see Alternatives Considered But Eliminated From Detailed Study). Both of these suggestions are very similar to existing text. Neither would meet the need for increased success implementing projects that achieve Northwest Forest Plan goals. Suggestions such as these contributed to language in Preferred Alternative A.*

Comment: Rather than stating that "individual projects will not be required to fully meet all ACS objectives" the proposed language might state that projects will not retard or prevent the attainment of ACS objectives.

Response: *The Proposed Action was modified (Alternative A) in the Final SEIS to retain existing language: "Under the Aquatic Conservation Strategy, the agencies must maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale over the long term." Alternative A also states that, "To comply with Riparian Reserve Standards and Guidelines that reference ACS objectives, the decision maker must complete an analysis that includes a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability." Alternative A therefore meets the intent of the ACS to "ensure that attainment of ACS objectives is not retarded or prevented."*

Comment: Ninth Circuit Court decisions have struck down the Forest Service reliance on watershed analysis when it was not adequately incorporated into the

environmental documents. The proposed language should direct that the environmental documentation for the project also incorporate the watershed analysis by reference.

Response: *An alternative to make a watershed analysis a decision-making document is considered (but eliminated from detailed study) in the ACS SEIS. The proposed amendment includes language that clarifies the role of watershed analysis, consistent with the 1995 Federal Guide for Watershed Analysis and the Northwest Forest Plan.*

Comment: Depending on how the ACS is interpreted, a fundamental re-design of how the ACS applies to permitted ski resorts may be required. The re-design could include a matrix of modified standards and guidelines and "best management practices" for special use permit lands. Their combination would insure a significant degree of protection for riparian areas, while allowing forest cover removal for optimal ski trail design.

The Draft SEIS should not have eliminated the alternative to exempt ski areas from ACS standards and guidelines (see page 22). The Crystal Mountain Master Development Plan Draft Environmental Impact Statement document (August 2001) contains example after example of changes to chairlifts, trails, bridges and parking lots which were made to avoid potential conflicts with the ACS according to the USFS ID Team. Were all of the changes made by a USFS ID Team really necessary to a master plan which was originally designed to be environmentally sensitive by a very competent national planning firm? According to the language as written in the ROD for the Standards and Guidelines concerning the ACS the USFS ID Team apparently thinks so. We strongly urge you find resolve for the language that is so detrimental to development of extremely limited land available for winter recreation.

With good regularity, the development of high quality ski trails directly conflicts with the riparian reserve setback requirements of the ACS. Ski area operators believe that ecosystem health, and the long-term viability of Region 6 ski centers, would both benefit from the agency's consideration of an array of BMPs and modified standards and guidelines that specifically address the unique attributes of winter sports facilities (in place of regular adherence to the standards and guidelines outlined in sections C and D of Attachment A). Ski run development should not be treated in a similar fashion as commercial timber harvesting. Periodically, ski area operators will need to modify winter sports facilities to adjust to changing user demands, such as the modifications that have been necessitated by the advent of snowboards or growth in visitation. Facility enhancements, particularly the development of additional winter sport facility infrastructure, must continue to fall under the Northwest Forest Plan's framework for recreation management.

Response: *The Draft SEIS explained why the "exempt ski resorts from ACS standards and guidelines" alternative was eliminated from detailed study. Clearly, the standards and guidelines were intended to be applied to ski areas. This alternative would not respond to the Purpose and Need. It would not clarify language in the ACS that hampers the agencies' ability to meet Northwest Forest Plan objectives. The scope of this SEIS is strictly limited to clarify ACS intent; this alternative would deviate from the intent to apply the Standards and Guidelines to activities within Riparian Reserves on federal lands within the Northwest Forest Plan area.*

Comment: We support the Proposed Action, with a request for one additional change. The change we propose is to allow off-site mitigation to be used to attain the ACS objectives. This will allow land managers to consider combining mitigation projects with project proposals that will further the overall objectives of the Northwest Forest Plan. It is recommended that this flexibility be added to encourage the implementation of restoration projects within watersheds. Since the overall intent of the Northwest Forest Plan was to raise the health of the watersheds by first doing watershed analysis, identifying restoration projects, and implementing those projects over time, allowing a site specific proposed action to include additional off-site restoration projects as part of a mitigation strategy will further the success and speed of improved watershed health. In some cases, this may be the only realistic way some identified and important restoration projects will be funded and implemented.

Response: *None of the alternatives restrict a federal land manager's ability to consider off-site mitigation in projects. Projects must be designed to comply with standards and guidelines in Resource Management Plans.*

Comments about the Merits of the Alternatives

Comments about the Merits of the No Action Alternative

- **Comment:** I'm very concerned about changes that have been proposed to modify the Aquatic Conservation Strategy of the Northwest Forest Plan. I understand that, if the changes are allowed to take effect, logging and road construction will be excluded from ACS regulation. Please choose the "no action" alternative.

Response: *Under all alternatives, logging and road construction projects would be required to follow the ACS. Logging and road construction are subject to specific Standards and Guidelines applicable to each land allocation. The Riparian Reserve land allocation is one of the four components of the ACS; compliance with Riparian Reserve standards and*

guidelines will "ensure that attainment of ACS objectives is not retarded or prevented (Northwest Forest Plan ROD, page B-12)."

Comment: The cumulative impacts of natural disturbance, private land degradation, and the short-term impacts of restoration activities leave no room for commodity production on federal lands. Private land management practices are still causing serious adverse effects on the habitat requirements for listed fish. The magnitude of needed restoration and its associated short-term impacts leaves no room for non-restorative commodity production. Natural disturbances such as the Biscuit fire also use up the limited available "disturbance space" and make commodity production impossible. There is a limited amount of "disturbance space" that these listed fish can tolerate and that available disturbance space is completely occupied by actions on non-federal land, plus necessary restoration actions on federal lands that have short-term impacts. There just isn't any disturbance space left over for commodity production per se. Therefore, No Action should be selected.

Response: *All of these issues, including the potential for large-scale disturbances, were considered in the 1994 Northwest Forest Plan FSEIS. The Secretaries of Agriculture and the Interior selected Alternative 9, with allowed for sustainable timber production. The Siskiyou National Forest and Medford BLM will consider the effects of the Biscuit Fire on "commodity" targets such as timber sales at the Forest and District Resource Management Plan level.*

Comment: Timber sales closer to levels anticipated in the Northwest Forest Plan is not a positive outcome of the Proposed Action if sales resembling those in the appended court cases are allowed to proceed. If these are the "vegetative management" projects that will be delayed or stopped, then "no action" alternative is preferable.

Response: *The Draft SEIS described the way the sales were characterized by the agencies as part of the court record. Some timber harvesting within late-successional and old-growth stands, including some regeneration harvest and associated road work, is needed to achieve PSQ associated with Alternative 9 in the Northwest Forest Plan FSEIS (and adjusted in individual RMPs).*

• **Comment:** Since the environmental consequences of the alternatives are "highly speculative", the more conservative, status quo "no action" alternative should be chosen.

Response: *The rationale for the final decision will be published in a Record of Decision.*

Comment: The existing rules represent a consensus among the various parties who crafted the Northwest Forest Plan in 1994. We find it upsetting that the Forest Service now wishes to supplant this consensus by altering the scope of the ACS. The existing language of the ACS should be preserved without changes. The ACS rules are functioning exactly as intended. That is, they serve as a check against the rampant ecosystem destruction that has characterized so much of Forest Service policy.

Response: *The various parties who crafted the Northwest Forest Plan did not intend for the ACS objectives to be interpreted as standards to be applied at all scales. The Draft SEIS stated that the agencies have had difficulty planning and implementing projects that follow Northwest Forest Plan principles (as indicated by annual sale quantity sold). Part of the difficulty is due to impossible expectations raised by interpretations of ACS language.*

Comment: I would like to say I'm against the change in rules in the ACS. I feel it would lead to degrading of the watershed due to looking at each sale by itself and not taking into account the accumulative change in the watershed. It's like one person throwing a pop can in your yard, kind of upsetting - but should a thousand people throw a pop can in your yard it is a major problem.

Response: *The National Environmental Policy Act requires cumulative effects analysis for proposed projects to account for "accumulative change." A thousand pop cans thrown in one's yard could have both adverse and beneficial effects; pop cans may be returned for deposit within the Northwest Forest Plan area.*

Comment: The proposed changes to the Aquatic Conservation Strategy would harm our water quality and stop the progress your agency has made over the last decade to protect salmon and rebuild the forests that the logging companies destroyed. Why change something that is working and is workable for all parties? The plan has been built from "real" science based on sound forest ecology research and science-based management philosophy has paid off here in the Northwest. I see evidence of this in the Mt. Baker-Snoqualmie Forest south of I-90. There are vast acres of clearcuts from the 1980's that have finally been replanted. They are growing back and this will help revitalize the many streams running through the area. Maybe someday the spotted owl, marbled murrelets and other old growth dependent species will learn to live in these "new" forests. But if we destroy the existing old growth forests now, these species may never have a chance to adapt. The salmon and steelhead may never return. I strongly urge you to choose the no action alternative for the ACS EIS changes.

Response: *The commenter does not describe how limited changes to language the ACS would "harm water quality and stop progress to protect salmon and rebuild the forests." The current interpretations are not "working" as they establish an expectation that may be impossible*

to achieve for projects that otherwise follow Northwest Forest Plan principles and would not retard or prevent attainment of ACS objectives at the watershed scale. Under all alternatives, clearcuts will be regenerated and restoration will occur. The Northwest Forest Plan intended that a sustainable level harvesting of late-successional and old-growth timber would occur within certain land allocations.

Comment: We think that changing the existing rules of the Aquatic Conservation Strategy will degrade salmon habitat and threaten struggling runs. We believe that the proposal will allow timber sales to proceed where they would harm salmon species listed under the Endangered Species Act. For this reason, we request that you retain the ACS rules as written rather than changing them as Secretaries Veneman and Norton propose.

Response: *The Biological Assessment is in Appendix D. The amendment itself is not expected to change protections for salmon. The BA indicates that implementation of some Resource Management Plans may be likely to adversely affect some populations of listed salmon, however no plans would jeopardize the continued existence of any species.*

Comment: The No Action Alternative should be chosen. If you cannot meet or attain ACS objectives on a site-scale project, why even have the objectives?

Response: *Many goals of Resource Management Plans cannot be attained by a site-scale project but are to be attained over a long period of time. The ACS objectives will be achieved through compliance with land allocation-specific and general standards and guidelines, given the context provided by analysis at the watershed scale.*

Comment: [Re:] p. 30-33 (Changed Conditions/New ESA listings/Appendix D) As the text states, even with the widened Riparian Reserves of Alternative 9, the probability of maintaining viable at-risk fish populations is 80% under the current "standards and guidelines." These at-risk species have continued to decline; my tabulation of Appendix D listings showed 25 new anadromous fish listings, or 89% of the total, since Northwest Forest Plan was enacted. Within the Northwest Forest Plan area, there are also 27 plant species, 10 invertebrate species, 8 freshwater fish species, 2 amphibian species, 8 bird species, and 6 mammal species listed under the ESA.

These listings occurred, it should be noted, with 98% compliance with Northwest Forest Plan standards and guidelines (at least, for the 21 projects and watersheds monitored in 2001) and reduced timber sales due to court challenges. In addition, the text states that roughly 83 sub-basins within the Northwest Forest Plan area contain water-quality impaired streams because of high water temperatures and/or sediment loads, characteristics which are highly detrimental to salmonids, and that several of these listings occurred since 1994. Even if the increase in listings reflects a backlog (i.e., the species/stream was in trouble prior to Northwest Forest Plan enactment) and even if activity on private/state forestlands precludes a 100% guarantee that species can recover, or not be listed in the first place, the increased number of ESA listings, as well as the continued decline in species already listed (such as the Northern Spotted Owl), calls for the most conservative, non-discretionary application of the ACS.

The listing of salmon and steelhead in the Northwest Forest Plan area indicates that the ACS, as it has been implemented by the agency, is not reversing the downward trend of these important aquatic species. Therefore, relaxing the standards and guidelines runs counter to the intent of FEMAT (e.g., pp. V-64 through V-72) and applicable federal laws such as the National Forest Management Act (NFMA) and the ESA. Thus, "No Action" should be the preferred alternative.

Response: *The Northwest Forest Plan FSEIS recognized future listings could occur even with implementation of the Plan (1994 FSEIS page 3&4-202). The proposed amendment would not "relax" standards and guidelines or make standards and guidelines "discretionary." The Biological Assessment in Appendix D concludes that implementing the Resource Management Plans as amended by the Preferred Alternative would not jeopardize any listed species."*

Comment: I have to express my deep concern with these and other proposals that threaten environmental protection set in place by the Northwest Forest Plan. As forests dwindle, they are more and more important for recreation. This includes hiking,

fishing, camping. These are values that many, many people share. However, by weakening the rules regarding conservation and protection against erosion, you are disregarding this vital need in favor of short-term gain and long-term destruction. As the agency managing public lands, your actions should reflect public opinion, not a small minority of corporate timber interests. The rules which are currently in place at least address these concerns.

Response: *The Northwest Forest Plan FSEIS considered the effects of the alternatives on recreation. The decision to implement Alternative 9 reflected the balance the Secretaries of Agriculture and the Interior are attempting to achieve. Under all alternatives, the agencies will attempt to implement projects that follow Northwest Forest Plan principles. As an agency managing public lands, actions must be consistent with applicable laws, regulations and policies that apply to Federal land management.*

Comment: The multi-ownership aspect of watersheds is one reason the No Action alternative is preferable, since it guarantees a more conservative approach on federal lands.

Response: *The 1994 Northwest Forest Plan FSEIS considered a range of alternatives given the multi-ownership aspect of watersheds. This aspect has not changed since 1994. The Secretaries of Agriculture and the Interior selected Alternative 9.*

Comment: If some, or even most, of the projects planned by the agencies are in fact stopped and/or delayed by the present "good" wording of the S&G's, then: "Good! And, "so be it!" That is because, in their present form, the projects are obviously either environmentally objectionable or non-viable, and they need to be either redesigned or aborted.

Response: *The agencies do not agree that projects that have been stopped or delayed are necessarily environmentally objectionable or non-viable. The agencies planned these projects to comply with laws, regulations, policies and standards and guidelines as directed in Resource Management Plans. The Draft SEIS discusses how the agencies characterized sales in the court record for the PCFFA v. NMFS litigation.*

Comment: The No Action Alternative's requirement that activities must be consistent with ACS objectives provides a mechanism for properly sizing riparian reserves so that they afford essential functions for stream protection. These provisos of the No Action Alternative also provide a mechanism for expanding riparian reserves as needed. These are monumental differences between the No Action and Action alternatives with respect to riparian reserves and the effects on aquatic resources. The No Action Alternative is a vast improvement over the severe inadequacies of merely assuming that ACS goals are met by implementation of standards and guidelines for riparian reserve width under the Proposed Action,

which allows riparian widths to be set arbitrarily, causing long-term aquatic habitat damage.

Response: *The proposed amendment would eliminate the expectation that projects achieve ACS objectives that are only achievable over time at the fifth-field or broader scale. This is not a monumental change. Resource Management Plans continue to provide mechanisms to expand or reduce Riparian Reserve widths. These adjustments are subject to NEPA and would not be set arbitrarily. Under all alternatives, Riparian Reserves would continue to be managed to maintain and restore aquatic ecosystem health over broad landscapes.*

Comments about the Merits of the Proposed Action

Comment: Clarification of the ACS language will encourage federal forest managers to move ahead with projects that they deem necessary for the health of the forest. In Northern California, this will allow projects to move forward that promote wildlife habitat diversity and hazardous fire fuels reduction. Additionally, managers will be able to treat areas of high mortality, such as disease or insect outbreaks, or damage from fires and wind. If managers had been able to treat heavy fuels from a major windstorm in 1998 that caused extensive damage to the Six Rivers National Forest, the 1999 Megram fire might not have been as large or severe.

We strongly support the proposed language clarification to the Aquatic Conservation Strategy portion of the 1994 record of decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts within the range of the Northern Spotted Owl. We believe that this clarification is essential to complying with the intent of the Northwest Forest Plan Northwest Forest Plan. Further, it will allow the Forest Service (FS) and Bureau of Land Management (BLM) to implement projects designed to provide near or long-term improvements to riparian zones, reduce the risk of severe wildfires with their accompanying environmental damage, and comply with the intent to maintain a viable infrastructure for dealing with the byproducts of forest management. This clarification will provide land managers with the flexibility they need to manage the forest resources while providing necessary protection measures to streamside and riparian zones, along with the wildlife dependent upon those habitats.

Response: *The action alternatives are intended to result in increased success implementing projects that follow Northwest Forest Plan principles. The rationale for the final decision will be published in the Record of Decision.*

Comment: NOAA Fisheries concurs that the proposed action will meet its intent by: (1) Clarifying the role of section C and D standards and guidelines in following the ACS; (2) reducing delay or stoppage of watershed restoration and vegetation management projects; and (3) promoting watershed recovery rates closer to those anticipated in the Northwest Forest Plan. We also believe that this action will not result in environmental impacts beyond those already discussed in the Northwest Forest Plan Final Supplemental Environmental Statement. Finally, the proposed action provides a formalized mechanism whereby action agency line officers will assess project-level ACS consistency (i.e. implementation of applicable standards and guidelines, and use of appropriate information in watershed analyses). Thus, we believe that the proposed action will result in more consistent and better-documented ACS consistency determinations, greater certainty that projects will not "retard or prevent attainment of ACS objectives," and thus greater certainty that ACS objectives will be attained over time.

Response: *The agencies agree hat the proposed amendment will have these effects. The rationale for the final decision will be published in a Record of Decision.*

Comment: I believe the ACS needs to be modified to allow for more activities that provide a long-term gain in our forests' health, even if there is some short-term adverse effect from the action. There has been a halt to several projects that were restoration oriented activities with an overall gain of better water quality and fish and wildlife habitat, but the current ACS did not allow these projects to go forward.

Response: *The Final SEIS alternatives were developed to increase agency success planning and implementing projects that follow Northwest Forest Plan principles. The rationale for the final decision will be published in a Record of Decision.*

Comment: I agree with and support the Proposed Action in your Draft SEIS. Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Northern Spotted Owl. This Proposed Action will allow for and must result in management actions that effectively implement the Aquatic Conservation Strategy (ACS) at appropriate scales. Short-term, localized disturbances should be allowed where necessary to obtain longer-term benefits to aquatic ecosystems in our Northern Spotted Owl National Forests.

Response: *The rationale for the final decision will be published in a Record of Decision. Alternative A specifically states that: "No management activities can be expected to maintain the existing condition at all scales and all times; disturbance from management activities must be considered in the context of the condition of the fifth-field watershed as a whole."*

Comment: Various timber organizations support the proposed action as described in this document. This is a common sense approach to allow activity that will achieve long-term goals of the Northwest Forest Plan. Short-term negative impacts on the Aquatic Conservation Strategy (ACS) should not be allowed to prevent active management of our federal forests. Stopping management is not in the best long-term interests and needs of our nation. This statement is supported on page 10 under 'purpose': "Northwest Forest Plan goals cannot be achieved without project implementation."

Various timber organizations support the efforts of the two agencies to clarify the Northwest Forest Plan that so long as individual timber sale projects comply with the Aquatic Conservation Strategy (ACS) standards and guidelines that no additional projects specific analysis regarding attainment of the ACS objectives are required. Adhering to the standards and guidelines on the project level should be the only requirement necessary for meeting the ACS objectives.

Response: *The rationale for the final decision will be published in a Record of Decision. The Draft SEIS did not include an alternative that strictly stated, "adhering to the standards and guidelines on the project level is the only requirement necessary for meeting the ACS objectives." Many standards and guidelines refer to attainment of ACS objectives; watershed analysis provides context needed to ensure compliance with these standards.*

Comment: The Mt. Ashland Association supports the Proposed Action, as it appears in the Draft Supplemental Environmental Impact Statement. ACS standards and guidelines, applied as they have been, have significantly affected processes relating to ski areas and have restricted ski run development, despite project designs which follow the ACS, with project planning and analysis which clearly contain evidence that projects would comply with relevant standards and guidelines in Sections C and D of Attachment A in the Northwest Forest Plan Record of Decision.

Response: *The rationale for the final decision will be published in a Record of Decision. All alternatives require that projects comply with standards and guidelines. Under the action alternatives, no further ACS consistency finding would be required.*

Comment: It is clear that confusion has occurred over how scale and time applies when considering whether a site-specific project meets the objectives of the Aquatic Conservation Strategy. The Purpose and Need in the ACS EIS will best be met, along with the ability to implement the Goals of the Northwest Forest Plan by selecting the Proposed Action.

The critical concept that the Proposed Action addresses is that the ACS was to be applied at a watershed or larger scale over a longer time period than that

normally addressed by a specific project. It is also important to note that the ACS supports management of the range of conditions normally found in a watershed. Adoption of the proposed modification to the Aquatic Conservation Strategy is important to give resource managers the tools necessary to fully implement the Northwest Forest Plan. Northern California Society of American Foresters believes that this language clarification is an appropriate way to return to the intent of the plan.

Response: *The rationale for the final decision will be published in a Record of Decision. Both action alternatives provide appropriate ways to return to the intent of the Northwest Forest Plan.*

Comments about the Site-Specific Application of the ACS

Comment: Re: Draft SEIS page 40 (Proposed Action): If managers are not required to apply the nine ACS objectives on a site-specific basis, it simply does not follow that "Land managers would be more likely to successfully plan and implement projects that follow the ACS."

Response: *Neither the Proposed Action nor Alternative A are intended to change overall direction in the Northwest Forest Plan. Land managers are expected to plan and implement projects that follow the ACS under all alternatives. As the Draft SEIS stated, the ACS objectives are to be attained at the watershed or broader scales. Following the ACS does not mean that all projects can "maintain existing condition" at all scales.*

Comment: The Draft SEIS assumes that only actions in Riparian Reserves will affect watershed functions, and ignores upslope effects. It does this by making the nine ACS objectives a simple wish list, removing enforceable standards.

Response: *ACS objectives are not now, nor have they ever been, considered standards see the Northwest Forest Plan FSEIS, Page F-166, which states: "The Aquatic Conservation Strategy objectives do not meet the definition of standards and guidelines..." The ACS objectives fit the definition of a goal..." A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed (36 CFR 219.3)." ACS objectives have the same status as other goals and objectives within Resource Management Plans. Appropriate scales for evaluating progress toward achievement of ACS objectives are the fifth-field watershed or broader scales.*

The ACS relies on four components to attain its objectives over time, Riparian Reserves, Key Watersheds, Watershed Analysis and Watershed Restoration. All of the alternatives retain these components. Riparian Reserves are portions of watersheds where riparian-

dependent resources receive primary emphasis and where special standards and guidelines apply. These standards and guidelines prohibit and regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives (see the 1994 ROD B-12).

Comment: We are deeply concerned about removing the core ACS requirements that site-scale projects be consistent with ACS objectives. We offer one example about how weakening this component of the ACS would harm a premier river on the east end of the Olympic National Forest. The Olympic National Forest, in their draft Environmental Assessment of the Dosewallips River road washout (in a major flood event in 2001), shows both alternatives to reopen the road would have a long-term negative impact on the ACS objectives at the project level. However, they state that at the watershed and sub-watershed level, ACS objectives would be met (and although we debate whether or not this is true, we use it to illustrate our point). Both alternatives to rebuild a road, which should be decommissioned to protect the aquatic resources, would harm salmon; the current preferred alternative would harm Chinook, a listed species. Other watershed degradation, well spelled out in the EA, would also occur. What is currently illegal under the ACS would become legal (and harmful to the aquatic system) in this new proposal. This has become a highly controversial and contentious issue on this Forest; tribal and other resource agencies have expressed deep concern for road rebuilding alternatives. Currently, the preferred alternative D would violate 2 of the 9 ACS objectives.

Response: *This comment illustrates the very confusion created by the existing language. The reference to "impact on ACS objectives at the project level" implies that progress toward achievement of ACS objectives is appropriately evaluated at the project scale. This is not true. The perception that a project is illegal because it "violates objectives" is another example of a misapplication of the ACS. The language proposed for amendment has been interpreted to mean that the ACS objectives are a "hard set of criteria" that should be applied at the project scale. The Draft SEIS explained that these interpretations have contributed to reduced success in implementation of Resource Management Plans. NEPA analysis addresses site-specific issues.*

Comment: The DEIS states on page 20 that "All components of the Aquatic Conservation Strategy would be maintained, including Riparian Reserve standards and guidelines, watershed analysis, watershed restoration, and key watersheds." Currently, if a given timber sale wouldn't maintain the existing condition or improve the watershed condition, it could not be implemented. The proposal would eliminate this requirement. Thus, it is not true to claim that the standards and guidelines would remain unchanged. Management would be fundamentally changed with respect to ACS.

Response: *The proposed amendment would not fundamentally change management with respect to the ACS. The Proposed Action was modified in Alternative A to retain the concept that, "Under the Aquatic Conservation Strategy, the agencies must maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale over the long term." This modification was made to reinforce that the objectives of the ACS are to maintain and restore watershed health at watershed and broader scales. As stated on page B-9 in all alternatives, including No Action, "This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds."*

Comment: Lack of site-specific application of the ACS objectives will allow activity in the reserves which will degrade the site, such as road- building, log removal as well as logging (under the guise of "thinning"), and narrower no-cut boundaries. The level and location of road building cannot be assumed to remain the same; more roads will be built in Riparian Reserves to facilitate increased management "activity". (B-6, 7).

Response: *Road and timber management standards and guidelines within Riparian Reserves will not change under any alternative. The Draft SEIS explained that some site-level degradation is inherent in projects that implement Resource Management Plans. The level and location of road building would still be subject to management direction in Resource Management Plans and will not exceed levels envisioned under the Northwest Forest Plan as a result of the proposed amendment to the ACS.*

Comment: Compliance with Standards and Guidelines also cannot replace site-specific application of the ACS because the agencies cannot be trusted to apply them with the ACS in mind. For example, outright logging could easily proceed in Riparian Reserves under the guise of "commercial thinning", facilitated by road-building which would not have to be evaluated on a site-specific basis. In fact, the 11/7/2002 BLM Information Bulletin (Appendix A, p. 12) recommends "utilizing timber sales as a treatment tool." Revised Riparian Reserve acreage was the "single largest factor" for the 1998 reductions in the "Probable Sale Quantity" from 958 to 811 MMBF per year (15%); thus, these reserves contain a large volume of timber.

Response: *The proposed amendment would not eliminate the concept that the ACS must be "kept in mind" during project planning. Commercial thinning, utilizing timber sales as a treatment tool, riparian reserve restoration, and "outright logging" are all subject to site-specific analysis and evaluation. PSQ is based on volume available outside of reserves.*

Comment: Under the Proposed Action, species not threatened or endangered will not be as well protected, since non-application of the ACS objectives at the site level will

allow, for example, the removal of downed wood, adequate canopy cover, the "thinning" of big trees that provide habitat, and so forth.

Response: *No changes in level of species protection are directly associated with the proposed amendment. Each agency administers special status species programs to assure proper management of species not listed under the ESA. No Action could prevent projects that improve habitat conditions over the long-term but include short-term adverse effects. The Proposed Action and Alternative A clarify that ACS objectives are to be attained over the long-term at the fifth-field watershed and broader scales.*

In all alternatives, projects within Riparian Reserves must comply with applicable standards and guidelines. For instance, timber management standards and guidelines require that adequate down woody material be maintained (or restored) within the range of natural variability for a given watershed. This does not imply that a site-specific loss of down-woody material would necessarily violate any standard.

Comment: Many ACS Standards and Guidelines would make little sense after the proposed changes regarding the role of the ACS objectives. The proposal renders many Section C and D Standards and Guidelines unclear and ineffective when considered along with the proposed language regarding the role of the ACS objectives within them. For example, consider the following Section C Standard and Guideline: TM-1(a). Where catastrophic events such as fire, flooding, volcanic, wind or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy objectives. ROD, p. C-32. The Draft SEIS proposes that the reference to the ACS objectives here is intended to mean "that projects will use relevant information from applicable watershed analysis to provide context for project planning." Taken together with the fact that the Draft SEIS has decoupled watershed analysis from any reference to the ACS objectives (see III(A)(1) below), the Draft SEIS has succeeded at obfuscating what it might mean to ever comply with this Standard and Guideline. We think it was much more clear before the Draft SEIS attempted to "clarify."

Other examples include: TM-1(c). Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain the Aquatic Conservation Strategy objectives. ROD, p. C-32. GM-1. Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing. Notably, the majority of the "Roads Management" ACS standards and guidelines are prefaced with the statement "(m)eeet Aquatic Conservation Strategy objectives by." ROD, p. C-32. It is unclear what any of the Road Management standards and guidelines would mean under the Draft SEIS proposal. Under the Draft SEIS proposal all of these

Standards and Guidelines, and more, could be taken as advisory or optional. The proposed language leaves them with essentially no enforceability.

The ROD's Section C has no standards and guidelines that require assessing the effects of grazing on riparian areas, aquatic conditions, and/or ACS goals or ACS objectives. Although the standards and guidelines require modification of grazing to meet ACS objectives, the lack of a requirement to assess the effects of grazing on riparian and aquatic resources and ACS objectives within some identifiable timeframe renders this requirement entirely moot.

Response: *The Proposed Action is modified in the Final SEIS (Alternative A) to address this concern and make clear the analysis needed to demonstrate compliance with standards and guidelines that refer to ACS objectives. An example is illustrative:*

Riparian Reserve standard and guideline GM-1 reads: "Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy Objectives. If adjusting practices is not effective, eliminate grazing." To comply with this standard under the Preferred Alternative A, a decision-maker must "demonstrate how the agency used relevant information from the applicable WA to provide context for project planning." The decision-maker is also directed to, "complete an analysis that includes a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability."

Given this direction, a decision-maker would have to consider the range of natural variability for riparian vegetation, bank stability, proportion of fine sediment in streambeds, water temperature, and width-to-depth ratios at the watershed scale. Information on the distribution of fish species and locations of particularly important habitat areas would also be relevant. This information, along with monitoring results, would provide a context for determining whether or not grazing practices should be adjusted or eliminated. If grazing impacts conditions at the watershed or larger scales so they were not operating within the range of natural variability, or if key indicators (i.e. width-to-depth ratio) could not be maintained at the watershed, the practice would be modified or eliminated.

Comment: The Draft SEIS claims that the assessment of site-specific impacts is not meaningful or feasible for purposes of evaluating consistency with the ACS objectives. This does not accurately reflect scientific understanding of environmental impacts assessment, and are not supported by language contained in the FEMAT Report, the FSEIS, and ROD as well as other agency documents and the scientific literature. For example, the following quotes from the NMFS and Forest Service make clear that it is necessary to assess compliance

with the ACS at the site-specific level: "Generally, adverse effects to listed salmonids and their habitat result from the aggregation of impacts which occur at the site-specific level. The accumulation of effects at the landscape level from numerous actions, if not fully arrested at the project scale, would reduce the likelihood of both survival and recovery of the species." (NMFS BO/CO for NW California, 1997, p. 15).

"Cumulative effects of forest practices may include changes in sediment, temperature, and hydrologic regimes, resulting in direct, indirect or eventual loss of key habitat components (e.g., clean gravel interstices, large woody debris (LWD), low temperature holding pools, and protected off-channel rearing areas) necessary for spawning and rearing of anadromous salmonids. These changes often are not expressed "immediately" at the project site, but instead may occur subsequent to triggering events (fire, floods, storms) or are' manifested off-site (downstream) of where the effects are initiated." (National Marine Fisheries Service, Position Paper on the Oregon Forest Practices Act, May 13, 1996).

Response: *This comment does not indicate why the citations provided, "make clear that it is necessary to assess compliance with Aquatic Conservation Strategy objectives at the site-scale." The citations discuss aggregated effects of multiple projects and sites. Cumulative effects analysis is a NEPA requirement regardless of ACS language. Endangered Species Act consultation also requires consideration of cumulative impacts.*

Comment: The Draft SEIS approach on this issue is again in direct conflict with the interpretation of the interagency REO, whose memo states in part: However, the S & Gs in Section C do not by themselves always guarantee that actions will be consistent with ACS objectives, in part due to the need to consider the results of watershed analysis. Draft SEIS, Appendix A, REO Proposed Interagency ACS Interpretations, p. 2.

Response: *The role of watershed analysis has been emphasized in the proposed amendment to provide context for site-specific application of standards and guidelines in both action alternatives, consistent with the intent of the Regional Ecosystem Office memorandum.*

Comment: Areas within riparian reserves plainly afford little protection if activities are allowed within the reserves, which damage riparian functions and/or degrade aquatic resources. Activities that remove vegetation or damage soils within the reserves are likely to degrade both riparian functions and aquatic resources in reliance on the standards and guidelines in Section C of the ROD allow activities within the riparian reserves that degrade their functions and aquatic resources. These standards and guidelines allow roads and landings to be constructed within the reserves even if they cause long-term damage to aquatic resources and

riparian functions and are completely inconsistent with attainment of the ACS objectives.

Response: *Standards and guidelines for Riparian Reserves are the same in all alternatives. These standards and guidelines are designed to "ensure that attainment of ACS objectives is not retarded or prevented." Some disturbance may occur at a site-scale, but at the watershed scale, conditions will be maintained or restored. The standards and guidelines require land managers to meet ACS objectives by minimizing roads and landings within Riparian Reserves and other measures.*

Comment: The standards and guidelines in Chapter C of the ROD provide no limit to the amount of logging that could occur within non-key watersheds. Therefore, under the Proposed Action non-key watersheds could be entirely clearcut and roaded outside of riparian reserves, even though this would cause long-term and severe aquatic damage.

Response: *Matrix standards and guidelines provide for green tree retention within all harvest units, and native stand retention within all watersheds. Matrix standards and guidelines are the same in all alternatives. Land managers may elect to increase the size of Riparian Reserves if warranted by the condition of the watershed relative to attainment of ACS objectives. The process for evaluating Riparian Reserve widths remains unchanged in any alternative.*

Comments Related to the Scientific Basis for the ACS

Comment: The FEMAT Report is the best available science particularly on the specific issues being considered in the proposal, yet the proposal significantly diverges from FEMAT regarding several important ACS provisions. The Draft SEIS offers no science in support of these departures, and in fact offers no discussion of the scientific issues surrounding these departures... Importantly, the ACS EIS Team interviewed FEMAT scientists about the extent to which the changes that are now included in the Draft SEIS were consistent with their views of how the ACS was intended to function. On several key points the scientists' responses diverge from the actions taken in the proposal. For example, scientists indicated support for site-scale evaluation of projects as they relate to meeting the goals of the ACS, and noted that some site-scale projects could be inconsistent with meeting the ACS objectives at the watershed or larger scales. Additionally, scientists stated that site-scale compliance with Section C and D alone was not consistent with their view of how the ACS was designed to function.

Response: *The scientist interviews were part of the scoping effort but did not yield consistent results. Agency scientists consistently emphasize the role of watershed analysis in providing context for project planning.*

Comment: Under the Administrative Procedure Act, the agencies have a duty to identify the scientific justification for the need for the amendment in ACS management strategies.

Response: *Reeves provided the scientific justification in his Declaration to the Court (in Appendix A) and review of Scientific Concepts Report (in Appendix F). These references, along with the 1995 Federal Guide for Watershed Analysis, explain why the proper scales for evaluating progress toward attainment of ACS objectives is the fifth-field watershed and broader scale.*

Comment: The Notice of Intent states that the Draft SEIS for the ACS will "consider relevant new science since 1994." In our scoping comments, we asked the agencies to include in the Draft SEIS the scientific literature supporting the decision to alter the ACS. In response to this request, the USFS and BLM included Appendix F, "Review of Scientific Information" completed by Dr. Gordon Reeves. While we appreciate Dr. Reeves' review, we point out that he cites to no studies, papers, or reports to demonstrate that changing the language of the ACS will benefit watershed health and lead to aquatic restoration. If anything, the literature review merely reinforces the need for the basic tenets of the ACS. Indeed, as Dr. Reeves himself concludes there is "no evidence in the peer-reviewed literature where fish populations or habitat responded positively to or remained unchanged as a result of the impacts from intensive land management activities." Draft SEIS, F-3.

Because the direct result of the proposed changes to the ACS will be to increase intensive land management activities in sensitive areas, we fail to see how the agencies can support their conclusion that the proposed action will not adversely affect aquatic regimes and environments. It is clear that the basic tenets behind the ACS and the Objectives have changed little during the past seven years, and that the Draft SEIS did not address any new scientific findings made since 1994 that warrant changing the ACS. As a result, there is no scientifically based reason to weaken the existing requirements of the ACS, and the agencies' decision to proceed with amendments to the ACS is arbitrary and capricious. 5 U.S.C. [Section] 706(2)(A).

Response: *The agencies do not intend to weaken the ACS. The proposed amendment is intended to result in agency success planning and implementing projects that follow Northwest Forest Plan principles. The agencies are attempting to eliminate an expectation that may*

be impossible to meet and to clarify the documentation needed to demonstrate a project follows the ACS.

Comment: Dr. Reeves' Declaration supports the "both/and" rather than "Either/or" application of the nine ACS objectives to all spatial scales. Although the objectives are not intended to be applied "equally" at all spatial scales of concern, this does not mean that they should not be applied. As for meeting the objectives, Dr. Reeves states: The ACS is supposed to maintain aquatic ecosystems within the range of variability at the site and small subwatershed scale and the larger subwatershed and watershed scale to provide for acceptable populations of anadromous salmonids and other targeted organisms (p. 7)...The ACS aims to allow for the expression of these variable conditions at a site or small subwatershed. However, it is not possible to evaluate consistency with the ACS at the sites scale by simply looking at the individual sites alone. (p. 8). The Proposed Action is contrary to Dr. Reeves' cautionary approach and language.

Response: *The proposed amendment clarifies that the proper scales to evaluate progress toward meeting ACS objectives is the watershed or broader scales. As explained in the ACS SEIS, the current interpretations have established an expectation that may be impossible to meet.*

Comment: Another point made in Dr. Reeves' declaration (see the last sentence of the paragraph at the top of page 5 - item No. 9) was: "They [the ACS objectives] are not intended to be a hard set of criteria that could or can be applied equally at all spatial scales of concern (i.e., site, watershed, province, and region)." To support the claim that the ACS objectives need not be site-specific, the declaration continued by saying there are wide variations of conditions at the site and watershed scale over time in the region of the Northwest Forest Plan (Item No. 10 on page 5). That is precisely the reason why a site-specific Aquatic Conservation Strategy (ACS) is necessary.

As Dr. Reeves points out in his "Review of Scientific Information" in the Draft SEIS: It is imperative that the spatial scale be specified when RNV and cumulative effects are discussed or evaluated. At small scales the RNV is very large. Consequently, it could be argued that there would be no cumulative effects resulting from management actions, except from the most extreme impacts. Draft SEIS, p. F-8. This is exactly the failing of the Proposed Action on this point - it never requires an RNV evaluation at a proper scale, and then seems to justify site-scale degradation with the logic that "not all sites were in good condition."

Without systematic, credible larger-scale analyses (landscape [river basin/province] and watershed) of RNV, we cannot know whether a particular

landscape is currently within or outside RNV, and thus certainly could not pretend that RNV is somehow guiding management at the site-scale. While we think the RNV concept holds promise, we also think it is important to note that the details of exactly how a RNV analysis would guide management have not been worked out certainly for aquatic systems. Also, while we agree that the fish habitat quality of different parts of the landscape in many cases varied through time, since the natural disturbance regime that helped created this mosaic is largely still in effect, we find it highly unlikely that watersheds are deficient in acres at the more recently disturbed end of the spectrum.

Although the draft SEIS is correct in stating that the range of natural variability is dependent on the scale at which it is assessed, it is incorrect about the conclusion that it is "problematic" and that it "is so broad that it is not a meaningful factor in assessing consistency with the ACS." On the contrary, as described in the FEMAT Report, FSEIS, ROD, Dr. Reeves Declaration, and scientific literature all scales provide a robust framework for identifying and analyzing the natural range of variability and using it for meaningful factor in assessing consistency with the ACS.

Response: *Appendix F contains Dr. Reeves' review of scientific information relevant to issues of scale and assessment of aquatic ecosystems. Dr. Reeves states that the failure to recognize the relationship between spatial scale and range of natural variability has contributed to the current confusion about how to implement the ACS. Dr. Reeves explains why the range of natural variability is not appropriately estimated at the site scale. The 1995 Federal Guide to Watershed Analysis describes how to assess range of natural variability at the watershed scale.*

Comment: Dr. Reeves' advocacy for management at ecosystem and landscape levels does not preclude adherence to the ACS objectives at site-specific levels, especially considering the degree of disturbance occurring on non-federal lands within the watershed. Although a certain amount of disturbance is necessary for resiliency, current ESA listings confirm that watershed "disturbance" is far beyond this point. As Dr. Reeves states: The less management actions resemble the natural disturbance regime under which an ecosystem evolved, the less resilient an ecosystem will be? Everest and Reeves (in review) reported that they found no evidence in the peer-reviewed literature where fish populations or habitat responded positively to or remained unchanged as a result of the impacts from intensive land management activities. Storms, drought, fire and other natural phenomenon provide adequate "disturbance" in riparian/aquatic areas such that management "activities" are not needed to provide this disturbance. Apart from nominal thinning to create CWD (removed during previous logging operations), and other truly restorative activities, the Riparian Reserves should be left alone so that a regime of natural variability can be re-established.

Response: *Dr. Reeves' review does not focus on whether or not projects should occur within Riparian Reserves. Riparian Reserve standards and guidelines would not change in any alternative.*

Comment: There is no good science, and none developed in the Draft SEIS, to show that eliminating evaluation and consistency to the ACS at the site-specific level, where appropriate and attainable, is valid.

Response: *The ACS would still be applied at all scales (for instance, Riparian Reserve standards and guidelines apply to specific sites), however the appropriate scale of evaluation of progress toward achievement of ACS objectives is the fifth-field or broader scale, over time.*

Comment: The Reeves declaration also says (starting with the third sentence in the paragraph that begins at the bottom of page 2.): "It[the ACS] was based on strategies developed previously in the 'Gang of Four,' PacFish, and SAT. The ACS was more comprehensive than these earlier strategies [previously mentioned in the declaration]. In the short term (i.e., 10-20 years), the ACS was designed to afford protection to watersheds that currently had good habitat and fish populations. The long-term goal (i.e., 100+ years) was to develop watersheds that function properly ecologically and supported acceptable populations of fish and other aquatic and riparian dependent organisms across the region covered by Northwest Forest Plan." Notice the periods of time mentioned in those sentences. They are the very time periods rejected by Judge Rothstein and the 9th Circuit Court - the very same erroneous time periods (particularly the too long 10-20 year period) the officials are now specifically establishing in the Standards and Guidelines. Remember: The circuit court specifically said that the one particular time frame of 10-20 years "ignores the life cycle and migration cycle of anadromous fish. In ten years, a badly degraded habitat will likely result in the total extinction of the subspecies...."

Response: *The Northwest Forest Plan Record of Decision Attachment A indicates it make take decades or centuries to achieve ACS objectives. This is one reason why NOAA Fisheries no longer uses consistency with ACS objectives as a surrogate for Endangered Species Act effects determinations.*

Comment: The Reeves statement *that* "not every reach of stream need be in good condition for the watershed to function properly" does not obviate the need for site-specific compliance with the ACS objectives. A large percentage of stream "reaches" within the Northwest Forest Plan area are adjacent to private or state-owned forest lands, which in Oregon at least are subject to very little regulation with respect to measures that would protect riparian/aquatic resources, i.e., no-cut buffer zones, logging practices, road densities, or seasonal restrictions. These

lands provide more than adequate "disturbance" to invoke any needed "resiliency" in fish species. Thus, stream reaches adjacent to federal forest lands do need to all be in good condition, to compensate for private/state lands and to provide refugia for riparian/aquatic species which cannot survive in less protected riparian environments.

Response: *The Northwest Forest Plan FSEIS focused solely on the role of federal lands in providing healthy watersheds. The condition of non-federal land is considered in watershed analysis.*

Comment: Notably, one flaw of the ACS that the Action Alternative could easily rectify but fails to do so relates to riparian protection of fishless and intermittent streams. The original Northwest Forest Plan assessment (USFS et al., 1993) failed to explain the basis for why less riparian protection is provided for fishless and intermittent streams. USFS et al. (1993) only suggests that smaller streams may not need wider vegetative protection because smaller LWD is more stable in small streams than large streams (USFS et al., 1993). However, LWD size is not a function of reserve width. This also utterly fails to address other riparian functions that are partially a factor of reserve width and their ramifications for headwater and fish-bearing streams. Further, the shift to smaller and less frequent LWD reduces sediment storage at the reach and channel network scale and can increase downstream sediment delivery while decreasing downstream LWD levels] or any explanation of how this is compatible with the protection and recovery of pervasively damaged watersheds and embedded aquatic resources, including fish-bearing streams. There is no sound premise that inadequate riparian protection of smaller headwater streams is consistent with the protection of aquatic resources at any scale, including in larger fish-bearing streams on the downstream end of the stream network. The failure to provide adequate protection of headwater streams will result in cumulative degradation of aquatic conditions in larger fish-bearing streams. Regional aquatic protection strategies based on science developed since the ROD have stressed the importance of providing as much, or more, riparian protection to smaller perennial and intermittent streams, in order to protect resources and habitats in perennial streams (e.g., Rhodes et al., 1994; CRITFC, 1995; Erman et al., 1996; CWWR, 1996).

Areas within riparian reserves are far from fully functional in the area of the Northwest Forest Plan. They include numerous roads and road crossings, which are a significant source of anthropogenic sediment and elevated runoff to streams and habitat damage from these impacts may continue for decades (USFS et al., 1993). Riparian areas have also been significantly logged (USFS et al., 1993), with major portions of the reserve area in open plantation conditions. These impacts render the areas within the reserves less than completely

functional in supplying wood, regulating microclimate, and providing bank stability and other important functions.

Response: *The Forest Ecosystem Management Assessment Team (FEMAT) considered recruitment of large wood and other riparian functions when making recommendation for interim riparian reserve widths. Riparian Reserve widths may be widened if needed, based on watershed analysis and appropriate NEPA analysis.*

Relationship between the Proposed Amendment and Alternative 9 in the Northwest Forest Plan

Comment: Under the Proposed Action, Riparian Reserves will no longer "have the highest probability of maintaining long-term soil productivity because they will have the least amount of management-induced disturbance."

Response: *Analysis in the Draft SEIS did not indicate that the Proposed Action would affect the referenced finding from the Northwest Forest Plan FSEIS (see page B-10 of the Draft SEIS). The proposed amendment would not result in greater soil disturbance than envisioned under Alternative 9 for the Northwest Forest Plan, because the same land allocations and standards and guidelines apply.*

Comment: The current proposal could result in activities within Riparian Reserves, and changes to post-watershed analysis Riparian Reserve boundaries, not anticipated by FEMAT and the Northwest Forest Plan. The agencies must analyze the impacts of these changes on northern spotted owls, whose viability ratings in the Northwest Forest Plan were dependent in part on these Riparian Reserves.

Response: *Northwest Forest Plan management direction related to Riparian Reserves would not change under the proposed amendment. Activities that would occur within Riparian Reserves under the Proposed Action are those anticipated by FEMAT and the Northwest Forest Plan. Appendix B addresses viability ratings related to northern spotted owl.*

Comment: The DEIS cannot expect the same outcomes as anticipated in the FSEIS, which were based on FEMAT, if it eliminates the FEMAT requirement for site-specific, as well as watershed level application of the ACS objectives. As quoted on B-6, from the Northwest Forest Plan FSEIS, "Decision makers will use the information developed during a watershed analysis to support decisions and to determine if a proposed project meets Aquatic Conservation Strategy objectives." Since this essential component of the ACS has not occurred, the expected outcomes of the FSEIS cannot be expected to be the same.

Response: *The ACS SEIS discusses this issue at length, specifically in Appendix B. The Interdisciplinary Team determined that the proposed amendment would not invalidate expected effects from the Northwest Forest Plan.*

Comment: The Oregon and California Lands governs certain lands in the Northwest Forest Plan area that are managed by the Bureau of Land Management. 43 U.S.C. Section 1181(a) - (j). Although these lands are to be managed for permanent forest production, other stated purposes include "protecting watersheds, regulating streamflow, and contributing to the economic stability of local communities and industries." Id. Section 1181(a). The ROD explains how Riparian Reserves and other components of the ACS will meet the watershed protection and streamflow regulation purposes (ROD, p. 50), but this may no longer be true if the current proposal is adopted. The agencies need to analyze whether the current proposal is in compliance with the Oregon and California Lands Act.

Response: *The proposed amendment would not invalidate effects analysis in the 1994 FSEIS (see Appendix B for details). No further analysis needs related to O&C lands is needed.*

Comment: It is also important to recognize that one of the five factors that the FEMAT Aquatics Group considered in evaluating the effects of the alternatives on fish was "the amount of Riparian Reserves and type and level of management activity allowed within them." Northwest Forest Plan FSEIS, 3&4-190. Ratings for other species also relied in part on Riparian Reserves. Thus any increase in activities within the Riparian Reserves due to a weakening of the Standards and Guidelines could invalidate the FEMAT ratings for fish. The agencies need to evaluate whether this language change would impact the FEMAT ratings for fish.

Response: *The proposed amendment would not change the amount of Riparian Reserves or the type and level of management activity allowed within them. Appendix B discusses viability ratings for fish.*

Comment: [The Northwest Forest Plan FSEIS states]: "The overall intent of the Aquatic Conservation Strategy is to restore and maintain the ecological function and processes of watersheds and aquatic ecosystems and aquatic ecosystems within natural disturbance regimes. Proposed projects must meet Aquatic Conservation Strategy objectives and will be approved based on the restoration and maintenance criteria. Under the Aquatic Conservation Strategy, a project cannot have a negative effect, in the long-term, on riparian-dependent resources. The risk has been shifted under the Aquatic Conservation Strategy because each project must meet the maintenance and restoration criteria by maintaining or restoring the physical and biological processes required by riparian-dependent

resources within a watershed" (Northwest Forest Plan FSEIS, 3&4-68-9). The environmental consequences of an ACS with this requirement removed are different from what was evaluated in the Northwest Forest Plan FSEIS.

Response: *The citations in this comment were never intended to imply that projects will not have any adverse effects, nor that disturbance at any scale is equivalent to ACS non-compliance. The Preferred Alternative A retains more of the existing language to respond to public concerns.*

Comment: The proposal violates the NFMA regulation requirement to provide for ecosystem and species diversity at appropriate spatial and temporal scales. The scientists who designed the ACS determined that the site scale was one of the scales at which to apply the requirement for maintaining ecosystem and species diversity. This is evidenced by the requirement for project (site) scale activities to be consistent with the ACS objectives. The responsible officials for the Northwest Forest Plan also determined that this was appropriate when they approved the Northwest Forest Plan, yet this plan decision would remove the requirement that ecosystem and species diversity be considered at the site scale. This appears to violate 36 C.F.R. 219.20(b). C. The proposal likely fails to "maintain viable populations of existing . . . vertebrate species" as required by the Forest Service implementing regulations. Under the NFMA, each national forest must protect watershed conditions, soil productivity, and biological diversity. 16 U.S.C. Section 1604(g)(3)(E)(i) & (F)(i). The NFMA requires the Forest Service to adopt regulations to "provide for diversity of plant and animal communities," and to "insure that timber will be harvested ... only where ... protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water ... where harvests are likely to seriously and adversely affect water conditions or fish habitat." 16 U.S.C. Section 1604(g)(3)(B),(E)(iii).

Although the NFMA regulations apply only to lands administered by the US Forest Service, during the development of alternatives for the Northwest Forest Plan the viability regulation was used "as a criterion" for development of alternatives that would also apply to Bureau of Land Management lands. See ROD, p. 44. This was seen as serving "the important policy goal of protecting the long-term health and sustainability of all of the federal forests within the range of the owl and the species that inhabit them," and to be in accordance with several laws including FLPMA. FLPMA has several of its own natural resource management standards and while we agree that they were met when the Bureau of Land Management lands were being managed to the NFMA viability standard, we question whether they will be met under the current proposal which may fall well short of meeting the viability standard for many species. The agencies need to analyze whether the current proposal is in compliance with the natural resource management standards in FLPMA.

Response: *National Forest Land and Resource Management Plans address National Forest Management Act (NFMA) requirements and BLM Resource Management Plans address Federal Land Policy Management Act. As discussed in the SEIS, the proposed amendment will not change the overall management direction in these plans.*

Comment: The Draft SEIS states that "the cumulative effects of proposed Northwest Forest Plan amendments are expected to be similar to effects analyzed in the 1994 Northwest Forest Plan FSEIS for Alternative 9. None of these efforts seek to change the predicted effects of the ACS." Draft SEIS, 34. This statement is flawed. Option 9 assessed the cumulative effects of logging according to the interpretation of the ACS that has been upheld by the courts, not the relaxed ACS now proposed by the USFS and BLM.

Response: *The proposed amendment would not relax the ACS. Appendix B provides rationale for the agency contention that the proposed amendment would not invalidate cumulative effects analysis in the Northwest Forest Plan.*

Comment: Several runs of salmonids have been listed since 1994. This is a situation that was not an anticipated effect of Option 9.

Response: *The Northwest Forest Plan FSEIS stated (page 3&4-202): "The [Aquatic Conservation] strategy ...would not ensure the population viability of many...fish stocks...it is not possible to determine whether [the plan] would preclude listings of fish species under the Endangered Species Act." Appendix B discusses assumptions and findings related to the viability of at-risk fish species.*

Comments about Effects of the Alternatives

Effects of the No Action Alternative

Comment: Your assertion on p. 40 that, "under No Action, some timber stand improvement and fuels reduction projects may be stopped or delayed by appeals and litigation due to misunderstanding of the ACS" is not true. GAO reported that less than one percent of true fuels reduction projects have been appealed or held up by litigation, and I believe the same is true for thinning projects in plantations.

Nobody, including myself, has ever opposed a restoration project in an EA or EIS.

Response: *There is widespread disagreement about the use of the term restoration as it relates to active land management. Opposition to timber stand improvement, fuels reduction and*

watershed restoration projects has occurred throughout the region, particularly if a project includes an element of commercial timber harvesting. Controversy also exists over where these projects should occur (some people argue that fuels reduction should only take place within the wildland-urban interface). Current ACS interpretations establish an expectation that is impossible for projects to meet. Given these interpretations, the agencies cannot demonstrate that projects meet the ACS.

Comment: The Pacific Northwest Ski Areas Association would like to take this opportunity to clarify a statement found on page 22 of the ACS EIS, namely "ACS standards and guidelines may restrict ski run development thereby reducing the potential for additional recreational opportunities." Without question, ACS standards and guidelines have restricted ski run development. The following examples illustrate how current ACS interpretation has impacted ski run development. The Crystal Mountain Master Development Plan Draft Environmental Impact Statement document (August 2000) contains many examples of how riparian reserves have restricted ski trail development. For specific examples of restrictions to ski run, ski lift, lodges, bridges, and parking facilities, please refer to Volume 4, Appendix A, Section 1.2. Modifications to the Proposed Action (pages 4 - 17) (see http://www.fs.fed.us/r6/mbs/crystal_eis/). Besides amendments to Crystal Mountain's Proposed Action, riparian reserves have had a "chilling effect" on the overall development potential of the Crystal Mountain study area, which extends beyond the noted modifications on pages 4 - 17).

Confusion resulting from misinterpretation of the ACS objectives has contributed to a three-year setback for the Mt. Ashland project, likely doubled the expense associated with the NEPA process, and has contributed to the complete redrafting of the Mt. Ashland Ski Area Expansion Environmental Impact Statement. In the late 1980s, operators of the Stevens Pass ski facility developed ski runs in the Mill Valley portion of the Stevens Pass special use permit (SUP) area. It is worth noting that trail development accomplished in the late 1980s would not have been allowed given the current, prevailing interpretation of the ACS. (in fact, much of Region 6's ski trail infrastructure would not have been possible with the prevailing ACS interpretation.)

Response: *The Final SEIS cites these ski industry perspectives. The proposed amendment clarifies the documentation needed to demonstrate that a project complies with standards and guidelines that refer to the ACS objectives. The proposed amendment is not expected to change design considerations for ski areas.*

Effects Related to Watershed Analysis

Comment: The proposed rule change in the Draft SEIS significantly changes the role of Watershed Analysis in the planning process. According to the Draft SEIS on page 18, the Watershed Analysis would provide "context for the design and site-specific assessment of the project, recognizing that Watershed Analysis is not a decision-making process in and of itself." This means that the Watershed Analysis, though required, would be used as a guide only and its core findings could be ignored by managerial discretion.

Decoupling Watershed Analysis from the ACS objectives weakens the ability to understand and prioritize Watershed Restoration. There will be no necessity to evaluate Watershed Analysis in determining the nature, scope and priority of watershed restoration both within a watershed and between watersheds.

Response: *The Federal Guide for Watershed Analysis (1995) describes the watershed analysis process and its use in project planning. Watershed analysis has never been a decision-making process subject to NEPA, and watershed analysis has always been expected to provide context for project planning. While the three alternatives (No Action, Proposed Action, and Alternative A) in the Final SEIS differ in the words used, the intent is the same for all.*

Comment: Detailed watershed analysis does not exist for any of the project watersheds I have commented on. Thus, no documentation would be required under the Proposed Action where there is little or no data.

Response: *Watershed analysis is required prior to implementation of most projects in Key Watersheds and Riparian Reserves. None of the alternatives change watershed analysis requirements.*

Comment: It is important to note that the level of watershed analysis envisioned by Dr. Reeves and other FEMAT authors has not taken place during the first 10 years of the Northwest Forest Plan, so cannot act as a check on activities within riparian reserves.

As noted in the Northwest Forest Plan (and by the Dwyer Court), watershed analysis is "unproven, unduly complicated, and not organized so as to provide effective decision points and cost-effective action priorities." Since the beginning of Northwest Forest Plan implementation, watershed analysis has been highly variable. [The requirement for] Watershed Analysis needs strengthening, not weakening.

Response: *The Final SEIS includes further discussion about the status of watershed analysis across the Northwest Forest Plan area. Watershed analysis provides context for project planning and implementation within and outside Riparian Reserves, as described in the Federal Guide for Watershed Analysis. None of the alternatives change the role, purpose or process for watershed analysis.*

Comment: Under the Proposed Action, the interim widths of riparian reserves established under the ROD may not ever be implemented because the standards and guidelines allow unrestricted revision of riparian reserve widths once WA is completed. Notably, these standards do not require that the ultimate riparian reserve width is consistent with the protection and restoration of streams and other aquatic resources at any scale. Under the Action Alternative, these standards do not require that the ultimate riparian reserve width is consistent with attainment of ACS objectives or the goals of the ACS. Under the Action Alternative, there is no requirement that reserve widths be consistent with recommendations or findings of the WA. Compounding these problems, there are no standards in Section C of Attachment A of the ROD requiring that WA be complete or scientifically sound, much less that it assess the effects of riparian reserve widths on aquatic conditions or ACS objectives. In short, under the Proposed Action, the sole reliance on the standards and guidelines in Section C of the ROD allows complete carte blanche for reduction in riparian reserve width as soon as WA is completed, regardless of the quality of the WA, or the consequences to aquatic resources and effects.

Response: *Adjustments to Riparian Reserve widths would continue to be subject to analysis under NEPA in all alternatives. Attachment A provides guidance related to Riparian Reserve widths. The proposed amendment would not change the ACS objectives or the Riparian Reserve standards and guidelines.*

Effects on Key Watersheds

Comment: The Draft SEIS eliminates the mechanism for ensuring that Key Watersheds are adequately protected by deleting the requirement that projects outside Riparian Reserves be consistent with ACS objectives. Without this consistency, the effectiveness of having Key Watersheds at all would be rendered null.

The Proposed Action's road construction provisions for Key Watersheds only protect inventoried roadless areas from damage by road construction. It does not protect uninventoried roadless areas from roads. It does not protect any roadless areas of any size, whether inventoried or not, from damage by logging.

The Proposed Action's prohibition on net increases in the amount of road does not assure that the negative aquatic effects of the road network do not increase.

Response: *Management direction related to Key Watersheds would not change under any alternative. Logging within Riparian Reserves must meet standards and guidelines and must have the purpose of maintaining or restoring aquatic and riparian ecosystems. No matrix standards and guidelines refer to attainment of ACS objectives.*

Effects on Rate of Watershed Recovery

Comment: I assume that many of the timber sales that may be released under the proposed action share common characteristics, i.e. old growth or native forests in matrix lands. Based on the nature of these sales, your assertion on p. 26 that the proposed action would lead to a greater rate of watershed recovery is at best arguable and most likely completely in error. This is pure conjecture and has never been proven.

Figure 3 on page 26 states that the "rate of watershed recovery" is slower than anticipated in the Northwest Forest Plan under the current ACS implementation, but with increased timber harvests in the proposed action, the rate of watershed recovery will improve. The FSEIS must back this up with some data, or remove it.

Response: *The Draft SEIS stated that success in restoration project implementation would hasten the rate of watershed recovery, because the Proposed Action would result in more restoration projects. The assertion about the rate of watershed recovery is tied to page 208 of the Northwest Forest Plan FSEIS. Page 208 stated that Key Watersheds have a faster rate of recovery than other Federal Land Watersheds, "due to the area of reserved lands, Riparian Reserves, and priority for restoration effort." The 1994 FSEIS did not estimate a rate of recovery or number of restoration projects.*

Discussion in the ACS Final SEIS about the rate of watershed recovery has been edited in response to these comments. The proposed amendment is intended to increase implementation of projects that follow Northwest Forest Plan principles. A timber sale may be the tool used to accomplish restoration work, or may provide funding or opportunity to achieve restoration that would not exist otherwise.

Comment: Due to the lack of requirements in the Proposed Action, watershed restoration is unlikely to significantly reduce existing damage or more than offset that caused by additional activities.

Response: *All alternatives include requirements (standards and guidelines) that apply to projects within the Northwest Forest Plan area. Management direction differs depending on land allocation. Watershed restoration is a component of the Aquatic Conservation Strategy. All alternatives include watershed restoration. None of the alternatives seek to approve "additional activities" beyond those envisioned in the Northwest Forest Plan.*

Effects on Soil and Water

• **Comment:** I am extremely worried that these changes will increase the detrimental effects on our drinking water causing a grave harm to all Oregonians.

Response: *None of the alternatives would increase detrimental effects on drinking water or hiking spots, beyond the level predicted within the Northwest Forest Plan FSEIS. Drinking water standards would not be affected by this project.*

Comment: According to the notice, Clarification of Language in the Record of Decision for the Northwest Forest Plan, approximately 83 sub-basins within the Northwest Forest Plan area contain streams that have been listed as impaired because of high water temperature and/or sediment loads (USDA 31). The notice mentions this increase could have been due to increase monitoring stations after 1994, but clearly avoids the implicating the long-term effects from logging from the 1960's-1992 could have played a factor in creating this impairment.

Response: *The focus of the discussion was changed conditions since 1994, so the pre-1994 conditions were not addressed. The Northwest Forest Plan FSEIS describes effects of pre-1992 logging on water temperature and sediment.*

Comment: Clean Water Act (CWA) violations may result if the Draft SEIS is implemented. FEMAT scientists have detailed the status of many streams in the Northwest Forest Plan, many of which they have listed as degraded and fail to meet the water quality standards of the CWA. The Draft SEIS also mentions, on page 31, that: "Approximately 83 sub-basins within the Northwest Forest Plan area contain streams that have been listed as impaired because of high water temperatures and/or sediment loads." In addition to this, Washington State Department of Ecology, in lieu of suing the Forest Service over CWA violations, signed a Memorandum of Understanding with the Region 6 Office of the Forest Service whereby DOE would work with each national forest in Washington State to make certain that CWA violations were diminished. Weakening the requirements under the ACS will make this a much more difficult task to accomplish.

The proposal to weaken the Northwest Forest Plan jeopardizes several other plans and decisions that are tiered to it. Subsequent to establishment of the Northwest Forest Plan, many plans, rules and ESA decisions have tiered to the plan. To the extent that they counted on ACS protections being in place on federal lands, any weakening of the ACS puts their legality in question. Water Quality Management Plans prepared, along with Total Maximum Daily Load reports, pursuant to the Clean Water Act in the Northwest Forest Plan area may no longer be adequate.

Weakening the ACS throws into question the adequacy of the Water Quality Management Plans that have been or are being completed for watersheds with non-point source water quality problems, such as the Nestucca and Grayback/Sucker watersheds. If the proposal results in less aquatic protection on federal lands, protection on state and private lands would have to be increased just to meet the same standards.

Weakening the ACS may put the agencies at-risk of violating the anti-degradation provision of the Clean Water Act because it may allow land management induced sediment and temperature loading in water quality limited streams.

Response: *These comments do not explain how the Proposed Action would violate the Clean Water Act, or result in further difficulty meeting water quality standards. The ACS is not weakened or changed by the Proposed Action or Alternative A.*

Comment: This proposal will allow clear cutting to occur on steep slopes and fragile soils adjacent to streams without considering how this logging will affect the long-term health of the entire watershed.

Response: *There is nothing within the Proposed Action that would "allow clear cutting to occur...adjacent to streams." Any logging proposed by the agencies is subject to site-specific effects analysis. Timber management within Riparian Reserves would comply with Riparian Reserve standards and guidelines.*

Effects on Fish

Comment: Reeves et al. (1995) argued that Pacific salmon (*Oncorhynchus* spp.) had life-history attributes that allowed them to persist in a dynamic environment. The life "cycle" of a species is not the same as its life "history." The point here is that even temporarily degrading the habitat of a fish species, which has a relatively short life cycle - of 3 to 4 years - compared to the "short-term" period referred to

in this SEIS (10-20 years) for "temporarily" but cumulatively degrading its habitat, is not compatible with the life cycle of a subspecies of fish.

The time scale that any project should be considered under should be long enough to allow very short-term negative impacts, a year or two at the most, after which conditions improve (such as is currently being used for restoration projects). But the Draft SEIS allows a 10 to 30 year time frame analysis. This is longer than the life span of the fish we should be protecting and places undue stress on depressed fish stocks.

Response: *Site-specific effects analysis is required under NEPA and the Endangered Species Act. Effects analysis includes an assessment of duration of effects. The Biological Assessment prepared for the amended Resource Management Plans states (see Appendix D): "Implementation of the Resource Management Plans, consistent with the standard and guidelines included in the Northwest Forest Plan, is expected to result in improved habitat conditions (over various time scales) for resident and anadromous fish species on lands within federal ownership and show progress towards attainment of the nine ACS objectives. This, in turn, is expected to provide for increased survival of various life stages of these fish and an increased probability of restoring and maintaining viable populations."*

Comment: The Draft SEIS does not analyze consequences of jeopardy findings under the Endangered Species Act. The document does not address whether, for example, NOAA Fisheries will still be allowed to equate ACS consistency with a no jeopardy finding. The Draft SEIS does state that: NOAA Fisheries and the U.S. Fish and Wildlife Service are developing new approaches to consultation that do not rely on the ACS as a surrogate for Endangered Species Act jeopardy analysis. The new approaches would be applied to programmatic consultation under both alternatives. Yet there is no actual analysis and therefore it is not appropriate for these agencies to assume that future, unidentified timber harvest or other management activities (such as building or rebuilding roads) will not violate ESA or the Northwest Forest Plan under the weakened ACS scenario. There is no discussion of the relationship to the ESA on the proposed changes to the ACS. It is premature to assume that timber harvest will be consistent with either the ESA or the Northwest Forest Plan simply because of the proposed changes in the Draft SEIS.

The Draft SEIS does not indicate whether the agencies propose to reinstitute consultation on the Northwest Forest Plan pursuant to Section 7 of the Endangered Species Act; but we surmise from the lack of discussion with consulting agencies at this point, that the agencies do not intend to reinstitute consultation. 16 U.S.C.[Section] 1536(a)(2)...[C]onsultation undertaken by NMFS after implementation of the Northwest Forest Plan specifically reserved the

jeopardy determination for site-specific project implementation. Therefore, there is no certainty that Option 9 does not jeopardize the continued existence of anadromous fish. These two factors constitute changed circumstances and indicate that the agencies must undertake consultation for changes to the ACS. The failure to do so violates the ESA.

Response: *Appendix D displays the Biological Assessment, which indicates that the amended Resource Management Plans within the Northwest Forest Plan area would not "jeopardize the continued existence of anadromous fish."*

Comment: If the Northwest Forest Plan becomes no longer "legal," the HCP's and all of the other aspects of ESA protection on state and private forestlands will be up in the air, creating more uncertainty for the state, timber companies and communities who depend on logging. For example, a decision by NOAA Fisheries on the coastal cutthroat trout to not list the species mentions as one of its reasons for the decision: "In addition, current regulations greatly reduce the risk that significant additional modification of habitat will occur in the foreseeable future" (67 Fed. Reg. 44934, 44949 (July 5, 2002)).

Response: *The Northwest Forest Plan would be "legal" under all alternatives. Nothing within the proposed amendment would increase the risk that "significant additional modification of habitat will occur in the foreseeable future." NOAA Fisheries has been consulted and wrote a formal comment letter supporting the proposed changes (included in total in this appendix). NOAA Fisheries has not indicated that this clarification of language would affect their decision not to list coastal cutthroat trout. The Biological Assessment in Appendix D concludes that the proposed amendment would not "result in any changes to the design of actions under the [Resource Management Plans]."*

Comment: I am writing as a very concerned scientist regarding the Bush Administration's and the Forest Service's attempts to lessen or eliminate the protections for salmon and salmon habitat in the Pacific Northwest. This plan is dangerous and will devastate the recovery of Pacific Northwest salmon. I would like to emphasize that the top predator in our oceans, the killer whale, and in particular the Southern Resident population (listed as Endangered by Canada, and Depleted in the U.S.) depends on healthy salmon runs for their survival. Approximately 90% + of their diet is salmon, and in particular Chinook. To eliminate the protections and not work stringently to restore the runs and the spawning grounds, as well as the eco-systems they support will lead to devastating results. This proposal is NOT sound science.

Ultimately, if these proposals are passed, humankind is only ensuring it's own extinction: it is important to recognize that the entire food chain begins and ends in our world's oceans. The killer whale, as the top predator is the ocean, is

therefore, the primary indicator species relative to the conditions of our world's oceans - not just the Pacific Northwest, but globally. What does it say when they are in danger and suffering from anthropogenic impacts of toxins in their systems - toxins they receive from the very fish they feed on. I urge the Forest Service not allow the desecration of the laws protecting salmon - not destroy the Endangered Species Act in favor of industrial / commercial interests. I would also point out that it endangers the futures of humankind as well as the precious children that you who work in this area might have.

Response: *The Biological Assessment in Appendix D discusses effects on fish species listed under the Endangered Species Act. Protection for fish would not be reduced under the proposed amendment. Laws affecting salmon will not change as a result of any alternative. The Biological Assessment states, "Implementation of the Resource Management Plans, consistent with the standards and guidelines included in the Northwest Forest Plan, is expected to result in improved habitat conditions (over various time scales) for resident and anadromous fish species on lands within federal ownership and show progress towards attainment of the nine ACS objectives. This, in turn, is expected to provide for increased survival of various life stages of these fish and an increased probability of restoring and maintaining viable populations."*

Comment: The Proposed Action allows riparian widths to be contracted even if WA finds that this is likely to completely extirpate native salmonids from a watershed.

Response: *None of the alternatives would allow riparian reserves to be managed in such a way as to completely extirpate native salmonids from a watershed. All require compliance with standards and guidelines and the Endangered Species Act.*

Effects on Amphibians

Comment: Draft SEIS proposals to alter the Riparian Reserve width and activities will likely impact the viability of amphibians. The needs of amphibians were also expected to be addressed by the "Survey and Manage" provisions of the Northwest Forest Plan. Agency efforts to remove these provisions, when combined with the ACS proposal and new research findings suggest that amphibian viability is not ensured.

Response: *The Draft SEIS did not include any proposals to alter Riparian Reserve width and activities. The Draft SEIS stated that the Proposed Action has no effects on species (including amphibians) beyond those disclosed in 1994. Appendix B discusses these findings in consideration of proposed language changes. Effects on amphibians from the Survey and Manage Proposed Action are disclosed in that Draft SEIS. The new research findings are not relevant to the proposed change in language for the ACS.*

Comment: We would like to bring to the agencies' attention two new studies that indicate that land use impacts on amphibians may be more detrimental than assumed in FEMAT. Both studies appear in the June 2003 issue of Conservation Biology. One study found that protection of riparian buffers alone was not nearly as highly correlated with high abundances of salamanders as was the percentage of disturbed area in the watershed. Wilson and Dorcas 2003. This may well have implications for the fate of salamanders under the proposal to equate ACS compliance with the Section C (Riparian Reserve) Standards and Guidelines.

Response: *This comment does not explain the relationship between these studies and the proposed amendment. The Northwest Forest Plan land allocations provide a high degree of protection of lands within and outside Riparian Reserves.*

Effects on Northern Spotted Owl

Comment: Given the substantially increased logging levels of mature and old growth forest that is bound to occur as a result of this, the EIS is required to fully analyze the adverse impacts on Northern Spotted Owls. This must include a detailed account of the current population trend range-wide and within sub-portions of the range, as well as the added/cumulative threats to the owl caused by barred owl incursions and the extent to which logging facilitates such incursions (i.e., by converting closed-canopy mature/old-growth forest to young forest or open-canopy forest in which barred owls, which are habitat generalists, can out-compete spotted owls.) No section exists in the DEIS to analyze adverse impacts to spotted owls, nor is there any information on current population trends (the last Meta-analysis was from 1998, and this has not been updated).

Response: *The proposed amendment would not increase logging levels within mature nor old growth forest over Alternative 9. As discussed in Appendix B, effects of the action alternatives are those already disclosed in the Northwest Forest Plan FSEIS.*

Comment: The Northern Spotted Owl, an indicator of many other ancient forest-dependent species, is in trouble, having lost approximately 6% of its population annually in Washington State in recent years. The proposed amendment would exacerbate if not seal the owl's decline.

Response: *The commenter does not state why the owl would decline under the Proposed Action. The Draft SEIS indicated that effects on the northern spotted owl under the Proposed Action are the same as those disclosed under Alternative 9 for the Northwest Forest Plan.*

Socio-Economic Effects

Comment: Your proposed actions will inevitably lead to increased long-term economic and ecological problems, as well as increased public controversy-resulting in less implementation of projects, not more.

Proposed modifications to the ACS will only bring about numerous lawsuits leading to a renewed divisive atmosphere and potentially, more lose-lose scenarios. The results will have long-term negative impacts on the entire economy of the Northwest.

Response: *Page 40 of the Draft SEIS stated that under the Proposed Action, "agencies are likely to continue to develop timber sale projects in an atmosphere of uncertainty, partly because groups opposed to timber sales are likely to continue to initiate litigation." Given the content of comments received on the Draft SEIS, the agencies expect continued controversy regardless of the alternative selected. The agencies concur with the assertion that "increased long-term economic and ecological problems" could occur with "increased public controversy resulting in less implementation of projects."*

Comment: The SDEIS states: "Uncertainty has indirect, unpredictable effects such as loss of experienced personnel or industry infrastructure [SEIS p. 39]." Can we get more information on these issues?

Response: *This comment led to corrections within the ACS Final SEIS. The Northwest Forest Plan FSEIS discussed the socio-economic effects of the various alternatives at length. The ACS Final SEIS states that socio-economic effects of Alternative 1 provide a surrogate for No Action effects and effects of Alternative 9 provide a surrogate for Proposed Action effects. These effects are briefly summarized in the ACS Final SEIS and are incorporated from the 1994 FSEIS by reference.*

Comment: The proposed changes to the [Northwest] Forest Plan will further degrade habitat for culturally sensitive species and historically precious tribal lands. These changes to the Forest Plan are more steps in the direction of eliminating native peoples that are in the minority of the U.S. population.

Response: *American Indian treaty rights and trust resources were discussed on pages 44-45 of the Draft SEIS. " The Proposed Action has effects on tribal treaty rights and trust resources*

similar to Alternative 9 in the Northwest Forest Plan...American Indian treaty rights are trust resources would be protected under the proposed amendment."

Comment: Regarding to the socio-economic effects, the U.S. Forest Service and Bureau of Land Management needs to address the effects of silviculture on minority and low-income people who gather non-standard forest products, increased taxpayer hardships due to the increased costs of water filtration for downstream communities, and increased taxpayer hardships for stream restoration necessary for healthy fish runs.

Response: *This comment led to corrections within the ACS Final SEIS. The Northwest Forest Plan FSEIS discussed the socio-economic effects of the various alternatives at length. The ACS Final SEIS states that socio-economic effects of Alternative 1 (in the Northwest Forest Plan) provide a surrogate for No Action effects, and the socio-economic effects of Alternative 9 provide a surrogate for effects of the proposed amendment. These effects are briefly summarized in the ACS Final SEIS and are incorporated from the 1994 FSEIS by reference.*

Comment: The Draft SEIS failed to address the full economic impacts of the proposed action. If the proposed action is implemented, increased logging of larger trees would occur on public lands. This is at a time when the market value for logs is at an all-time low. Private timber companies are hesitant to log their own lands in these market conditions. Thus, it is more attractive for industry to log public forests at this time. The Draft SEIS should have considered the economic losses for federal timber receipts when public land timber sales increase during a weak market. The Draft SEIS gives unsubstantiated claims such as: "Continued reduced timber sale levels may negatively affect employment within the wood products industry." (Draft SEIS page 41.) This is not true. Employment in the wood products industry is affected much more by the demand for wood products, not the supply of wood products. The FSEIS must correct this error. The Draft SEIS also says incorrectly: "If timber sale receipts are reduced, government revenues and revenue sharing with states and counties are reduced." (SEIS page 41.) This is not true. Timber sale receipts and revenue sharing with states and counties are no longer tied together. The "Secure Rural Schools and Community Self-Determination Act of 2000" provides a stable revenue sharing process to states and counties that is not currently dependent on timber sale receipts. The FSEIS must correct this error of fact and subsequent error in economic effects analysis.

Response: *This comment led to corrections within the ACS Final SEIS. The Northwest Forest Plan FSEIS discussed the socio-economic effects of the various alternatives at length. The ACS Final SEIS states that socio-economic effects of Alternative 1 provide a surrogate for No Action effects and effects of Alternative 9 provide a surrogate for Proposed Action*

effects. These effects are briefly summarized in the ACS Final SEIS and are incorporated from the 1994 FSEIS by reference.

The Secure Rural Schools and Community Self-Determination Act of 2000 has affected revenue sharing with counties. Under the Act, counties within the Northwest Forest Plan area elected to receive a guaranteed level of payment, instead of payments that are a direct percentage of timber harvest receipts. Otherwise, socio-economic effects of Alternative 9 are still valid.

Comment: With developed winter recreation becoming economically more important in these communities, their continued health is a pressing issue. The proposed changes to the ACS, plus flexible interpretations of the standards and guidelines, will be central to the future viability of winter resorts.

Response: *The Final SEIS includes further discussion about effects of the alternatives on ski area management and other projects besides vegetation management and watershed restoration.*

Comments about Cumulative Effects

Comment: Under the Freedom of Information Act ("FOIA"), Earthjustice obtained, documents uncovering the timber industry's inside role in precipitating the proposed amendment to the ACS along with other initiatives to weaken the Northwest Forest Plan. The public is made privy to the proposed changes one by one without a meaningful opportunity to evaluate the sweeping programmatic changes as a whole.

The proposed amendment to the ACS may affect the viability of species that are targeted by other rollbacks. For example, the reversion to the old view that O&C lands must be managed primarily for timber production could eliminate riparian reserves and ACS protections on large blocks of low elevation salmon habitat in Oregon. The Draft SEIS contains no assessment of the cumulative and overlapping effects of all of these initiatives to weaken the Northwest Forest Plan and protections for endangered wildlife and the environment.

Response: *The Draft SEIS addressed cumulative effects with other Northwest Forest Plan amendments. Further discussion is included in the Final SEIS. The O&C lawsuit has been settled and the settlement is discussed in the Final SEIS.*

Comment: The Forest Service and BLM are proposing to amend the Survey and Manage mitigation measures of the Northwest Forest Plan at the same time as the agencies are proposing to alter the ACS. Draft SEIS, 40. The U.S. Fish and

Wildlife Service is also reviewing the status of the marbled murrelet and northern spotted owl, which may lead to changes in critical habitat designation, legal protection for the species, and the use and importance of the Late-Successional Reserves. In addition, the agencies are proposing several administrative rule changes related to hazardous fuels reduction, salvage logging, small scale timber harvest, national forest planning, and administrative notice, comment, and appeal procedures. Finally, large wildfires dramatically altered the landscape in 2000 and 2002, which has prompted the agencies to propose huge salvage logging projects, the effects of which were not addressed in FEMAT or the 1994 ROD and FEIS for the Northwest Forest Plan. None of these activities were disclosed or discussed in the Draft SEIS.

Response: *Further discussion has been added to the Final SEIS in response to this comment. The Final SEIS discusses each of these proposals and their relationship to the ACS EIS.*

Comment: The Draft SEIS eliminates methods that would ensure cumulative watershed effects will be addressed for every project.

Response: *None of the alternatives would change the NEPA or Endangered Species Act requirement for cumulative effects analysis.*

Comments Related to Monitoring

Comment: The agencies state that "the [Aquatic Riparian Effectiveness Monitoring Plan] will provide information at the province scale in a decade or more." Id. at 32. What is this plan and what are its elements? Has it been peer reviewed?

Response: *The academic community, tribal interests, private industry, and land management agencies reviewed the Aquatic Riparian Effectiveness Monitoring Plan (AREMP-Reeves et al. 2003 -- see references in the Final SEIS). The plan is designed to assess progress toward achievement of ACS objectives across the entire Northwest Forest Plan area. Site information will be collected and aggregated at the fifth-field watershed scale. The distribution of watershed conditions across basins will be evaluated.*

Comment: AREMP data at the province scale in a decade or so is not soon enough to prevent the collapse of riparian/aquatic dependent species. The ability of AREMP to achieve consistency with ACS objectives is still uncertain, and should not be a replacement for project level consistency assessments.

The Draft SEIS assumes (page 32) that "effectiveness monitoring" will take the place of enforceable ACS standards and guidelines. But the Draft SEIS offers no examples of how this has ever been successful before.

Response: AREMP information will help determine how well Aquatic Conservation Strategy objectives have been met at a broad scale. It does not replace of site-specific application of standards and guidelines. AREMP information will help the evaluate programs of work in Resource Management Plans relative to attainment of plan objectives. Meanwhile, watershed analysis provides context for project planning and implementation. Project-level analysis focuses on compliance with project-specific standards and guidelines, along with site-specific direct and indirect effects analysis. The Endangered Species Act also requires site-specific and cumulative effects analysis for projects that may affect listed species. All of these levels of analysis and documentation are appropriate and one is not intended to replace another. The Draft SEIS clarified that achievement of ACS objectives is meaningfully evaluated at the watershed and larger scales.

Comments about the Data Quality Act

Comment: The proposal likely violates the Data Quality Act Section 515 of the Treasury and General Government Appropriations Act for fiscal year 2001, known as the Data Quality Act, directed the Office and Management and Budget (OMB) to issue government wide guidelines that "provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies." Public Law 106-554; H.R. 5658 (codified at 44 U.S.C.A. Section 3506).

OMB published guidelines effective October 1, 2002. OMB Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by Federal Agencies. 66 Fed. Reg. 49, 718 (Sept. 28, 2001). Both the US Department of Agriculture and the US Department of Interior have issued their own implementing guidelines as directed by the OMB, which are applicable here along with the OMB guidelines because the decision makers are the Secretaries of Agriculture and Interior. Pursuant to the Data Quality Act guidelines of both Departments we are raising our requests for correction of information in the ACS Draft SEIS in these timely comments on the Draft SEIS. Because the requirements for the content of requests for correction are nearly identical between the Departments, we have written one combined request but address it to both Departments.

For each specific description of information that we seek to correct, we explain: a) why it is in noncompliance with the OMB, USDA and/or USDO I Information Quality Guidelines; b) the effect of the error and how it affects us; and c) a recommendation for how to correct the information. Regarding all of the information discussed below, its portrayal by the agencies is "influential," as

defined by OMB, because it has a clear and substantial impact on the important public policies regarding salmon, watershed and old growth forest protection in the Pacific Northwest. Thus high standards for transparency apply to this information.

The Draft SEIS states in numerous places that the four components of the ACS are "retained" in the proposal (see e.g. Draft SEIS, Appendix B-2.). However, this is clearly not the case. The agencies' analytical conclusion that the four components of the ACS are "retained" is not capable of being substantially reproduced because, given the proposal's severe weakening of the four components, it is simply not possible that an independent analysis of the original supporting data (FEMAT, the Northwest Forest Plan and the proposal) would generate similar analytic results. The information is not of adequate quality, objectivity or utility, or integrity.

The Draft SEIS represents that it is simply clarifying language in the Record of Decision for the Northwest Forest Plan but is not altering the intent or effects of the ACS. The information that the agencies are disseminating regarding the effects of its proposal on the four components of the ACS is not substantively accurate, reliable, or unbiased and is not presented in an accurate, clear, complete and unbiased manner.

The information is not based on the best available science. The Draft SEIS has failed to base its statements that the four components are retained on any of the FEMAT scientist interview responses, or an accurate evaluation of FEMAT, the Northwest Forest Plan, or the REO memorandum. Any of these sources illuminate the fact that while the proposal may retain the names of the components, their functions in protecting and restoring aquatic habitat is severely weakened.

One effect of the misinformation has been to require us to do our own analysis of the impacts of the proposal and how they differ from that of the Northwest Forest Plan because we cannot rely on the Draft SEIS representations on this issue. We are concerned that people reading the NEPA document at face value will be misled into incorrectly thinking the impacts of implementing the proposal would be minimal. Additionally, if the environmentally damaging Action Alternative is chosen based on this non-complying information, another effect will be the loss of critical forest protections.

If the agencies pursue this proposal, the agencies should correct the information by acknowledging the impacts of the proposal on the four components of the ACS and fully analyzing and disclosing the likely impacts of this weakening.

Response: *This comment provides no specific information on which to evaluate compliance with the Data Quality Act. The proposed amendment specifically retains the four components of the ACS. No changes to the allocation of lands to Riparian Reserves or Key Watersheds or to the management directions for activities within these land allocations are proposed. No changes to the management direction for performance of Watershed Analysis or Watershed Restoration are proposed.*

The comment does not explain how the proposed amendment would weaken the ACS from its original intent. Clarifying the ACS so that projects can proceed is not "weakening" the ACS. The agencies have sought and received assistance from the original authors of the ACS to assure that this clarification reflects the original intent for ACS. The comment provides no data, or source for data of better quality than that used in the Draft SEIS. The agencies are using the best available science and their own experts in this analysis. All of the known scientific evidence that bears on the consequences of the alternatives is included in the SEIS.

Other Comments

Comment: The Draft SEIS claims that the current application of ACS has limited timber sales to 35% of the Northwest Forest Plan's quota and that is evidence that ACS is not working as intended. However, if the level of timber sales is not meeting Northwest Forest Plan goals, then sales quotas need to be re-examined and not the Aquatic Conservation Strategy. Indeed, a reduction in timber sales means that the ACS is working to meet the conservation goals of the Northwest Forest Plan.

Response: *Several public comments included in this Appendix contend that timber harvesting and road work are, by definition, incompatible with the ACS. However, the Northwest Forest Plan Record of Decision does not support this contention.*

Comment: The courts (including the 9th circuit in 1996) stated that full implementation of all components of the plan are necessary to remain within the legal requirements of NFMA.

Response: *To comply with NFMA, the Forest Service must indeed follow their Forest Plans. Agencies may also amend their plans as needed.*

Comment: The ACS amendments are pervasive and far reaching. They affect "all Resource Management Plans for Forest Service and BLM administrative units within the Northwest Forest Plan area." Therefore, such amendments are clearly significant under NEPA.

Response: *Under NEPA, the agencies are under no obligation to document a finding of no significant impact for the SEIS. However, as stated on page 10 of the Draft SEIS, documenting the analysis within an EIS was not intended to imply that there are significant environmental effects as a result of the amendment.*

Comment: The SDEIS states: "The Proposed Action does not make any irretrievable or irreversible commitments of resources." [SEIS p. 44]. This statement assumes that we know how to regrow old-growth and restore streams, which are highly questionable assumptions.

Response: *The Final SEIS now states that, "Neither the Proposed Action nor Alternative A make any irretrievable or irreversible commitments of resources beyond those predicted for Alternative 9 under the Northwest Forest Plan." Irretrievable or irreversible commitments of resources were discussed in the Northwest Forest Plan FSEIS on page 3&4-321: "Implementation of projects in accordance with the preferred alternative [Alternative 9] would result in some, if not all, loss of utility of habitat for late-successional and old-growth related species for the period of time needed for that habitat to grow again-a commitment of over a century. Some old-growth forest stands would be harvested under the preferred alternative. Although certain economic and social values will be saved at the point of harvest, these areas will then not contain as full an array of ecological and human values associated with old-growth forests as stands not harvested. Depending on the physiographic province and site, it would be several centuries or more before the full array of those characteristics return."*

Comment: The requirements for site-specific analysis are not dispensed with by the proposed amendment to the ROD. Section E (Implementation) of the 1994 ROD states (page E-1) "...resource management attributes will be subject to site specific environmental analysis...before they are conducted." Also, the 1994 ROD (page 13, paragraph 1), "...timber sales...must be consistent with these amended planning documents...[referring to the ROD with added standards and guidelines]. In addition, timber sales must undergo appropriate site specific analysis..." The ROD contains numerous other references to standards that must be observed at the site or project level - for example, (i) green tree retention, (ii) retention of late successional fragments (in the unmapped late successional reserves) and (iii) the survey and manage protocols. These are specific requirements that must be observed in project implementation. There is nothing in these sections of the Northwest Forest Plan to indicate that analyses required by these standards are to be construed as merely "providing context."

Response: *Site-specific analysis is required under a variety of laws, regulations and policies applicable to federal land management.*

Comment: A watershed is the sum of its parts, and as the court cases state, using generalized data over a large area (20-200 square miles) will mask the site-specific impact of one timber sale.

Response: *Site-specific impact analysis is required by NEPA. Data collection and effects analysis is expressed at a variety of scales, depending on the element being studied. For instance, many standards and guidelines in resource management plans are applied at the stand scale, so data and effects analysis is appropriate at that scale to assure that projects comply with the plans. Cumulative effects analysis generally considers watershed level effects.*

Comment: The authors of the REO letter of November 1999 are "senior agency managers", "inter-agency managers", and "senior technical staff." They do not have the professional background or legal status (they are in the executive branch, not judiciary) to re-interpret the ROD to their liking. The REO letter interprets the ROD as the agencies would like it to be interpreted, rather than outlining its true meaning as supported by FEMAT and the court cases. Thus, the fact that this ROD interpretation has "full and unanimous agreement among the agencies" is no reason for confidence in the veracity of the comments.

Response: *The Northwest Forest Plan provided for interpretation of its standards and guidelines via the Regional Ecosystem Office (ROD page E-16). The Regional Ecosystem Office memorandum was put in Appendix A to demonstrate the attempts the agencies have made in interpreting the ACS. This letter was never forwarded to Forest Service or BLM line officers as formal direction.*

Comment: The proposed action could support two mutually reinforcing categories of projects [within ski areas]: (1) restoration work, such as culvert upgrades; culvert elimination/stream channel redesign; improved road drainage; etc. and (2) ski trail improvement that might create some initial impact, but would be more than offset by restoration work (category 2) within the larger watershed, creating a net gain for achieving ACS objectives. With careful project design ski resorts may see opportunities for facility improvement. However, for these opportunities to be realized, the standards and guidelines under RM-1 in the ROD, page C-34, must be interpreted broadly, where the creation of recreation facilities within riparian reserves (for example, tree removal for ski trails) are not considered "timber harvest", but rather remain under the RM-1 category. The RM-1 category, because it refers only to not precluding the attainment of ACS objectives on a broad scale, allows for more flexible interpretation. If, however, recreation projects such as ski trail development are considered "timber harvests" and subsumed under timber management standards and guidelines (TM-1), then the benefits accruing the proposed action would be considerably weakened.

Response: *Land managers determine the applicability of various standards and guidelines depending on the nature of a particular project. Resource Management Plans include a variety of standards and guidelines that apply to ski areas.*

Comment: The IBLA decision [published in Appendix A] inadvertently shows why the agencies must continue to be required to apply and meet the ACS objectives on a site-specific level: (1) the "watershed analysis", accepted by the court as adequate, "consists mostly of the opinion of BLM's hydrological expert" (p. 72), and (2) the proposed action in the "reserves" was quite considerable, including revising Riparian Reserve boundaries and removing cut timber, both of which the judge finds a rational basis for (p. 74). Thus, "watershed analysis" and the "Standards and Guidelines" alone do not adequately protect riparian/aquatic species, given these liberal interpretations.

Response: *The comment does not provide evidence that the proposed amendment would affect the outcome of the IBLA decision. The IBLA decision was included in the Draft SEIS to provide evidence that different people interpret the language of the ACS differently, thus creating the current confusion. The IBLA decision was not included in the Final SEIS Appendix A.*

Comment: [Re:] p. 26 (Alternative Comparison Table) a) What "ambiguous language" is the table referring to? How will amending the language clear up the "ambiguity"? b) "Vegetation management" and "Timber Sale Volume Offered" should be in the same box as under the first category ; the text only discusses timber sale volume. c) Why doesn't this chart include the impact on ESA listed/ proposed for listed species?

Response: *The alternative comparison table has been edited in the Final SEIS. A Biological Assessment (BA) had not been prepared in time to publish in the Draft SEIS. The BA is included in Final SEIS Appendix D.*

Comment: According to the ROD (page 19): "PSQ levels are presented as an effect, not a goal, of the Standards and Guidelines. Therefore, harvest within areas specified for habitat protection will be greatly curtailed." Yet from the beginning of Northwest Forest Plan implementation and increasing during the current Administration, biodiversity is considered a constraint. If it were not, we wouldn't be having PSQ numbers thrown around as if they were hard commitments. The Draft SEIS prioritizes an increase in PSQ and the potential for future change with respect to future levels of sales offerings within Key Watersheds over ecosystem health.

Response: *The Proposed Action does not affect the purpose or character of the PSQ estimates. The Draft SEIS did use the PSQ as an indicator of difficulties agencies have had in planning and implementing projects.*

Comment: The 1994 FEIS page 3&4-69 states: Proposed projects must meet Aquatic Conservation Strategy objectives and will be approved based on the restoration and maintenance criteria. The existing conditions and physical and biological processes operating within a watershed will be the baseline to consider project proposals. Province, river basin, and individual watershed analyses will provide the baseline information and frame the context of the natural disturbance regime. Decision makers will use the information developed during a watershed analysis to support decisions and to determine if a proposed project meets Aquatic Conservation Strategy objectives. This is a new approach; in the past, proposed projects were considered from the context of what effects (positive and negative) a proposed project would have on the conditions and functions and processes of a watershed. Frequently, mitigation was used to attempt to neutralize the negative effects on riparian-dependent resources. . . The risk has been shifted under the Aquatic Conservation Strategy because each project must meet the maintenance and restoration criteria by maintaining or restoring the physical and biological processes required by riparian-dependent resources within a watershed." The proposed "new" ACS actually looks a lot like the "old" pre-Northwest Forest Plan approach where mitigation (e.g., make up excuses for logging such as pointing out that trees are growing elsewhere in the watershed) are used to justify timber sales and road building that clearly degrades watersheds.

Response: *The Draft SEIS explained the difficulties the agencies have encountered because of language implying that projects must meet ACS objectives. A single project should not be expected to maintain and restore watershed conditions. The current interpretation that existing conditions must be maintained at every scale is unreasonable. There is no evidence that the authors of the 1994 FSEIS intended this interpretation. The referenced statement in the 1994 FSEIS is not related to any findings of impact (see Appendix B). Under all alternatives, watershed analysis would still be expected to provide context and baseline information.*

Comment: The 1994 ROD is not a model of clarity. But it is doubtful that the amended ROD achieves more clarity of language than the original ROD or that it will remove the uncertainty that presently exists in connection with implementation of the ACS. There is considerable doubt as to the meaning of expressions such as "fully attain" in "fully attain ACS objectives" and "context" in "provide context for the design...of the project." In practice, it seems easier to determine whether or not a proposed project is "consistent with the ACS" than to decide if the watershed analysis "provides context for the design...of the project." Even though not stated with great precision, the 1994 ROD provides criteria for making a finding that a project meets ACS objectives. The procedure is outlined on page B-10, paragraph 2, of the 1994 ROD (which is to be deleted in Alternative 2). The replacement text does not provide any means of deciding how to proceed in cases where the watershed analysis, the stipulations of Sections C and D or other provisions of the Northwest Forest Plan reveal that a proposed project is likely to produce adverse effects for some aquatic or riparian ecosystem components.

Response: *The Proposed Action was modified in Preferred Alternative A to respond to this comment. More of the existing language is retained in Alternative A.*

Comment: Contrary to the assertions of the Bush administration and the timber industry, the Aquatic Conservation Strategy is not "broken." In fact, it is working as intended to stop and modify projects that harm aquatic habitat, and to facilitate implementation of projects that achieve important aquatic restoration needs. If the ACS is amended as proposed these important habitats could be degraded or destroyed. Consider the following examples of places saved by the Aquatic Conservation Strategy. Wind River, Mt. Adams Ranger District, Gifford Pinchot National Forest. The Wind River is the last major free-flowing Cascade Mountain river system in southern Washington. Four massive roadless areas, including Indian Heaven and Trapper Creek Wilderness, feed its headwaters, and it is home to gray wolves, goshawks, northern spotted owls and other wildlife. With excellent spawning and rearing habitat, the Wind River is a stronghold for threatened steelhead trout and Chinook salmon.

In 1998, the Forest Service approved the Limbo timber sale to cut 13 million board feet from over 400 acres of mature and old-growth forest in the Wind River basin. In addition to harming several spotted owl sites, the roadless area logging in the Limbo timber sale was expected to inflict considerable harm on steelhead trout by increasing sediment and instream flows. Washington Department of Fish and Wildlife consider the Wind River steelhead to be the most imperiled run in the lower Columbia River. A federal judge blocked the sale after ruling that the sale did not conform to the Aquatic Conservation Strategy.

In 1998, the Willamette National Forest proposed the SIMCO timber sales that involves clearcutting almost 500 acres of the remaining mature and old growth forest in steep landslide-prone watersheds.. The Forest Service withdrew this sale after conservation groups challenged the sale on the grounds that Aquatic Conservation Strategy objectives were not being met.

The Deer Mom timber sale was offered for sale in the fall of 1998. It called for 855 acres for logging through group selection and commercial thin in the Deer Creek Watershed. Some of the logging was immediately adjacent to creeks, which were supposed to be protected as "riparian reserves." 364 acres of suitable spotted owl habitat would have been removed by this timber sale. The sale was stopped on the grounds that Aquatic Conservation Strategy objectives were not being met.

The Lower Hayfork Creek Timber sale was proposed by the Shasta-Trinity National Forest in 1998. This sale proposed logging 2.1 MMBF from 1,417 acres in Lower Hayfork Creek watershed within highly unstable soils, 445 acres of critical northern spotted owl habitat, and within riparian reserves. Logging prescriptions included Green Tree Retention, thinning, and sanitation salvage by helicopter, cable, and tractor logging systems. Approximately 7.5 miles of road reconstruction would also take place. Citizens For Better Forestry, Forest Service Employees For Environmental Ethics, and Kenneth Lanspa (a Forest Service soils scientist) commented on and appealed the sale. The appeal decision issued on January 4, 1999 affirmed the decision to implement the proposed alternative. This sale was stopped by the PCFFA decision due to Aquatic Conservation Strategy (ACS) issues.

Skinny Doe timber sale, proposed in 1998, is a thinning project on 428 acres of thick tree farms, and would produce 4.61 mmbf of timber in the South Fork Coquille River. The stands that are to be thinned were clearcut in the 1930's and 1940's with steam donkeys on railroads. The sale was stopped by litigation because of the impact to fish species, largely due to the fact that over 5.4 miles of road construction and reconstruction would take place. The courts enjoined the sale on the grounds that the sedimentation created by the road construction would harm salmon in the Coquille River. The Forest Service agreed not to build any new road and instead use only existing railroad beds and jeep roads. The sale was released from injunction in 2002 and is to be auctioned this fall.

Response: *The agencies do not agree with this characterization of the projects mentioned. These projects were intended to achieve desired conditions in Resource Management Plans. The action alternatives are not intended to change the way projects are designed, rather to clarify project documentation requirements.*

Comment: "In summary, the timber supply from federal lands is one drought, one insect and disease outbreak, one severe fire season, one election, one budget, one successful appeal, one loss in court, one listing of a threatened or endangered species, one new piece of pertinent scientific information, one change in technology, one shift in public opinion, one new law, one loss of a currently available technological tool, one change in market, one shift in interest rates, et al, away from "stability" at all times. And, these changes do not come one at a time, they come in bunches like bananas [sic] and the bunches are always changing. So, stability in timber supply from the public lands is simply a myth, a dream that was never founded in reality. It is time to stop pretending." Thomas, The Instability of Stability, <http://www.pnrec.org/pnrec97/thomas2.htm>. If the former Chief of the Forest Service and main architect of the Northwest Forest Plan holds this view, the agencies are obligated to clearly explain and justify its conflicting view.

Response: *The Draft SEIS concurs with the notion that there are multiple factors affecting the agencies ability to meet PSQ.*

Comment: This Draft SEIS fails to disclose the negotiations with and influence of the timber industry to the Bush Administration and to the agencies and may also have violated the Federal Advisory Committee Act. Earthjustice Legal Defense Fund, in a Freedom of Information Act (FOIA) request filed on behalf of three environmental organizations, received and released in 2003 several documents that clearly showed the timber industry's influence on the Bush Administration. The industry had five top demands, including weakening of the ACS. The role this played must be discussed in the Purpose and Need statement, as well as in the substance of the action alternative. In addition, the influence of the industry and direct meetings between the industry and the Bush Administration may be a clear violation of FACA. This must be disclosed.

Response: *The Draft SEIS described the Purpose and Need. It does not include "meeting industry demands."*

Comment: The Forest Service and BLM indicate that an alternative eliminated from further study was to "analyze additional proposals under a single EIS." ACS Draft SEIS, 22. The agencies misunderstand the request of the GPTF and others that raised this issue in scoping. The requirement to analyze contemporaneous (and past and future) agency actions that will have synergistic effects on the planning area is an obligation to address the cumulative impacts of the agencies action, not the requirement to assess a reasonable range of alternatives. Compare 40 C.F.R. [Section] 1508.7 with 40 C.F.R. [Section] 1502.14.

Response: *This comment resulted in changes in the Final SEIS. The suggestion to consider concurrent agency proposals in a single EIS is no longer treated as an alternative considered.*

Full Text Of Letters As Required by CEQ Regulations

NEPA requires that a Final EIS include the full text of comment letters from federal, state and local agencies, as well as elected officials. Three formal letters were received from 1) NOAA Fisheries; 2) the Environmental Protection Agency; and 3) the Association of Oregon Counties and the Association of O&C Counties.

A-65



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

June 12, 2003

To: Nicollette D. McClurkin, NOAA Strategic Planning

From: D. Robert D. Lohn, NMFS, Northwest Region *Michael R. Crouse (for)*

Subject: NOAA Fisheries' Comments on the Draft Supplemental Environmental Impact Statement for Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Northern Spotted Owl (DEIS 0304-03)

Dear Sir:

NOAA's National Marine Fisheries Service (NOAA Fisheries) has reviewed the subject Draft Supplemental Environmental Impact Statement (DSEIS) and provides the following comments for incorporation in the Department of Commerce comments on the subject DSEIS.

Background

In 1993, the Northwest Forest Plan (NWFP) was initiated to end the impasse over management of Federal forest lands in the Pacific Northwest within the range of the northern spotted owl. The NWFP Record of Decision (ROD), signed in 1994, provides a framework and system of Standards and Guidelines, using an ecosystem approach to address resource management. The NWFP amended 29 land management plans within the range of the northern spotted owl. Among the objectives of the NWFP are to: "... Protect long-term health of forests, wildlife, and waterways...." and to "... Produce a predictable and sustainable level of timber sales and non-timber resources that will not degrade or destroy the environment...." Integral in meeting NWFP objectives is the Aquatic Conservation Strategy (ACS), which is composed of four components (Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration), and a set of standards and guidelines to be implemented at the project level, and which "... prohibit and regulate activities in Riparian Reserves...." (ROD, Page B-12). Associated with the ACS is a set of 9 objectives (ROD, Page B-11), which serve as broad landscape management objectives, directed at the watershed scale, to be achieved over time by maintaining and restoring natural processes through implementation of the ACS components and application of the Standards and Guidelines.

Under current planning regulations, action agency line officers are required to make findings that individual actions going forward under the NWFP are consistent with the ACS. The proposed

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action discussed in this DSEIS would make limited changes to the NWFP to clarify how the agencies should design projects to ensure consistency with the ACS, and thereby attainment of the ACS objectives.

Purpose and need: The DSEIS states that:

“Projects needed to achieve Northwest Forest Plan goals have been delayed or stopped due to misapplication of certain passages in the Aquatic Conservation Strategy. The ACS has been interpreted to mean that every project must achieve all ACS objectives at all spatial and temporal scales. This interpretation suggests land managers must demonstrate that a project will maintain existing conditions (or lead to improved conditions) at every spatial and temporal scale. Any project that may result in site-level disturbance to aquatic or riparian habitat, no matter how localized or short-term, could be precluded under this interpretation. This interpretation establishes a nearly impossible expectation for demonstrating that projects follow the ACS.”

The DSEIS concludes that this misinterpretation, particularly with respect to recent litigation (PCFFA v NMFS) has foreclosed opportunities for meeting NWFP goals, most notably with regard to watershed restoration and vegetation management projects.

Proposed action: The DSEIS proposes to amend the NWFP Record of Decision by modifying language in Attachment A, Appendix B, Pages B-9 and B-10 to clarify that:

- The proper scales for Federal land managers to evaluate progress toward achievement of the ACS objectives are the watershed and broader scales.
- No single project should be expected to achieve all ACS objectives.
- Decision makers must continue to design projects to follow the ACS. Project records must contain evidence that projects comply with relevant standards and guidelines in sections C and D of Attachment A in the Northwest Forest Plan Record of Decision. Project records must also demonstrate how the decision maker used relevant information from applicable watershed analysis to provide context for design and assessment of the project.
- References to ACS objectives in the standards and guidelines in Sections C and D do not require that decision makers find that site-scale projects, in themselves, will fully attain ACS objectives.

The DSEIS states that:

“The purpose of the proposed action is to improve agency success in planning and implementing projects that follow Northwest Forest Plan principles, including a predictable and sustainable timber supply. Northwest Forest Plan goals cannot be achieved without project implementation.”

The DSEIS also states that the proposed action does not change the goals of the NWFP, and that all components of the ACS, including the objectives, are preserved.

NOAA Fisheries' Review

Recommendation: The DSEIS (Page 18, Proposed Action) states: "To follow the ACS at the site-scale, decision makers must demonstrate that projects comply with standards and guidelines in Sections C and D." The DSEIS continues "The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for the design and site-specific assessment of the project...." NOAA Fisheries recommends that these two passages be augmented to more clearly delineate the role of watershed analysis, *in conjunction with* the standards and guidelines, in ensuring consistency with the ACS and thus attainment of ACS objectives over time. The final wording in this section of the SEIS should provide a clearer discussion of the role of ACS objectives within the context of the overall strategic plan (ACS), as well as the role of watershed analysis and the standards and guidelines in assuring ACS consistency at the project level relative to the relationship between project design and assessment and attainment of ACS objectives. We recommend that this discussion (possibly with examples of how project-level ACS consistency would be ensured under the proposed action) be included in the Final SEIS. NOAA Fisheries staff are available, and would be pleased to work with the ACS EIS team in developing this discussion.

Conclusion: We concur that the proposed action will meet its intent by: (1) Clarifying the role of section C and D standards and guidelines in following the ACS; (2) reducing delay or stoppage of watershed restoration and vegetation management projects; and (3) promoting watershed recovery rates closer to those anticipated in the NWFP. We also believe that this action will not result in environmental impacts beyond those already disclosed in the Northwest Forest Plan Final Supplemental Environmental Impact Statement.

Finally, the proposed action provides a formalized mechanism whereby action agency line officers will assess project-level ACS consistency (*i.e.* implementation of applicable standards and guidelines, and use of appropriate information in watershed analyses). Thus, we believe that the proposed action will result in more consistent and better documented ACS consistency determinations, greater certainty that projects will not "retard or prevent attainment of ACS objectives", and thus greater certainty that ACS objectives will be attained over time.

As stated in the DSEIS, NOAA Fisheries is working cooperatively with interested Federal agencies to develop Endangered Species Act consultation documents and processes that complement the proposed action described above. We look forward to our continued involvement in those activities as well as our involvement in completion of a Final SEIS.



A-291

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: ECO-088

JUL 10 2003

02-080-AFS

ACS EIS
P. O. Box 221090
Salt Lake City UT 84122-1090
Attn. Joyce Casey, Team Leader

Dear Ms. Casey:

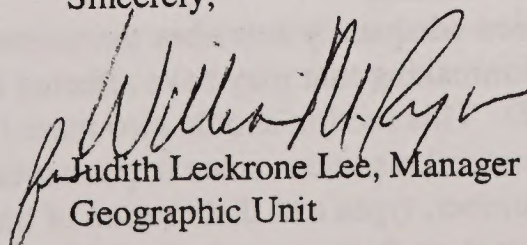
We have reviewed the draft Supplemental Environmental Impact Statement (EIS) for the proposed **Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Spotted Owl, Western Oregon and Washington; and Northwestern California.** We have conducted this review in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The draft EIS examines two alternatives, the proposed action and no-action. The proposed action consists of amending the Aquatic Conservation Strategy (The Strategy) portions of Resource Management Plans in the Northwest Forest Plan (NWFP) area to clarify that while all projects in the area would still be required to comply with the applicable standards and guidelines from the Record of Decision (ROD), there would no additional site-scale determinations of consistency with the Strategy guidelines.

We have rated the EIS, LO (Lack of Objections). We have identified a few areas where the EIS could be clearer in the discussion of alternatives and environmental impacts, but we believe that the purpose and need for the action, to resolve current confusion about evaluating progress toward achievement of the NWFP Strategy, will help to improve management of aquatic resources in the NWFP area.

This rating and a summary of our comments will be published in the *Federal Register*. A copy of the rating system used in conducting our review is enclosed for your reference. Thank you for the opportunity to review this draft EIS. If you would like to discuss these issues, please contact Jonathan Freedman at (206) 553-0266.


Sincerely,


Judith Leckrone Lee, Manager
Geographic Unit

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Enclosures

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EPA's Detailed Comments on the Draft EIS for the Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Spotted Owl

Purpose and Need

The Purpose and Need chapter has clearly established the underlying need; there is more than adequate background information describing the present difficulties with language in several portions of the Strategy. This language has resulted in the interpretation that even small projects with long-term benefit which result in minimal, short-term site disturbance could be delayed because they could be seen as inconsistent with the Strategy. The discussion in the EIS makes it clear that this was not the lead agencies' intent in crafting the Strategy.

This chapter, however, needs a more specific statement of purpose that addresses the underlying need. The purpose statement shown on Page 10 is quite general. We believe that a clearer, but still concise purpose statement in this chapter would place clear boundaries on the action and help set an appropriate range of alternatives for consideration and analysis in the following chapters of the EIS.

Alternatives

On page 21 of the Section "Alternatives Considered but Eliminated from Detailed Study," the EIS states that an alternative (No Cutting or Removal of Trees Older Than 80 years) was eliminated because it does not respond to the Need for Action. However, it remains unclear *why* the lead agencies believe this would not respond to the need for action. An explanation that answers this question should be added to the EIS.

In the discussion of Streamline Procedures for Planning Restoration Activities, the EIS states, "Applying different approaches to the ACS to different types of projects has no valid rationale and would not resolve ambiguities within the current language." While EPA acknowledges that it would not resolve the language ambiguities, we respectfully disagree with the first part of this statement. There appears to be a rationale to apply different approaches to different types of projects: restoration projects differ sharply in purpose from logging and extractive activities and may be more likely as a group to meet the long term goals of the Strategy. This alternative, however, may be better characterized as being unworkable because restoration activities are often incorporated as parts of extractive projects, and extractive and restoration activities might also be equally unlikely to avoid short term impacts at the project site scale. Therefore, we suggest removing the words, "has no valid rationale and ...". We also recommend explaining in a little more detail why you have not chosen this alternative to analyze in the EIS.

Affected Environment

This Section adequately describes the existing regulatory environment, the Strategy, and agency decisionmaking that may have affected lands within the Northwest Forest Plan area since the 1994 ROD. This section should also more fully describe existing data on the present condition of natural resources since implementation of the Strategy. Such information might include the number, types and distribution of timber sales, restoration projects, fuel treatments, road maintenance or closures, and other timber or forest management actions. Additional

information might include comparison of data from the pre-ROD period with current data for indicators of aquatic ecosystem health as water quality, water temperature, presence or abundance of salmonids in salmon bearing streams, or other parameters that may be barometers of forest health in the NWFP area.

Environmental Consequences - Cumulative Effects

We acknowledge that the monitoring period for the Strategy has been too short to demonstrate effects and that it is very difficult to assess impacts of this proposed action or compare it to the effects of not taking action. The discussion of cumulative impacts, however, could be more clear about the predicted biological and physical impacts of implementing the clarification of language.

It may be helpful to make use of EPA's *Consideration of Cumulative Impacts in EPA Review of NEPA Documents*, which can be found on EPA's Office of Federal Activities home page at: es.epa.gov/oeca/ofa/cumula.html. The guidance states that in order to assess the adequacy of the cumulative impacts assessment, five key areas should be considered. EPA tries to assess whether the cumulative effects analysis:

1. Identifies resources if any, that are being cumulatively impacted;
2. Determines the appropriate geographic (within natural ecological boundaries) area and the time period over which the effects have occurred and will occur;
3. Looks at all past, present, and reasonably foreseeable future actions that have affected, are affecting, or would affect resources of concern;
4. Describes a benchmark or baseline;
5. Includes scientifically defensible threshold levels.

Using this framework, it might be possible to estimate an increase in projects that might occur by examining the number of projects done since implementation of the NWFP ROD (since this is a supplemental EIS, looking at all past actions would not be required) and the number of known reasonably foreseeable projects that were never completed owing to litigation. Using approximate acreage figures for projects completed and not completed, an estimated difference in impact acreage could be a starting point for discussion of effects. You may then determine how predicted impacts compare to benchmarks established during development of the NWFP and compare how these impacts may or may not exceed important threshold levels for aquatic resources.

AOC
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O & C **A-297**
ASSOCIATION OF O&C COUNTIES
P.O. Box 2327
HARBOR, OREGON 97415

July 10, 2003

SEIS for Aquatic Conservation Strategy
PO Box 221090
Salt Lake City, UT 84122

Re: Comments on Aquatic Conservation Strategy (ACS) SEIS

Oregon's two associations of county governments strongly support clarification of the Aquatic Conservation Strategy (ACS) attached to the 1994 Record of Decision on the Northwest Forest Plan. Please accept this letter as the comments of the Association of Oregon Counties and the Association of O&C Counties on the Draft Supplemental Environmental Impact Statement (DSEIS) regarding clarification of the ACS.

The Association of O&C Counties is made up of counties in Western Oregon within which lie a special category of BLM-managed timberlands known as the Oregon and California Grant Lands. The O&C Lands are dedicated by the O&C Act of 1937, 16 USC §1181a et seq., to the production of timber for the purpose of supporting local communities. The O&C Counties are, according to statute, both the recipients of shared timber receipts from the O&C Lands and the local governments most concerned with the community economic stability promised by the O&C Act. The purpose of the Association of O&C Counties is to cooperate with the managing agencies in the development of policies for the management of these lands and to work with members of the Oregon Congressional Delegation in matters concerning national legislation and administration of federal laws affecting the O&C Lands.

The Association of Oregon Counties ("AOC") is an intergovernmental entity of Oregon's 36 counties, of which 31 have within their borders lands managed by the Forest Service. The purpose of the AOC is to represent the interests of counties and their citizens in issues involving other governments. As the coordinating authority for land use planning, Oregon's counties have a special role and interest in the use of public lands within their boundaries, both federal and state. Forest management actions by federal and state agencies also significantly affect the social, economic and environmental well being of rural communities, which look to the county governing bodies to represent their interests with state and federal governments. Counties containing Forest Service lands are also the recipients of shared timber receipts from the Forest Service Land, with such receipts dedicated by federal law to the support of schools and roads in those counties.

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AOC and the Association of O&C Counties do not believe that the proposed editorial changes to selected portions of the ACS as set forth in the preferred alternative in the DSEIS meet the minimum threshold requiring preparation and consideration of a SEIS. Because the proposal is simply to make clear the original intent, there should be no environmental impact that has not already been addressed in the NEPA analysis conducted in 1993-94. Presumably, the NEPA analysis completed by the agencies at that time took into account the agencies' intended application of the ACS. AOC and the Association of O&C Counties believe that an EA would have satisfied the NEPA requirements for this proposed action. For this reason, we believe that the analysis in the DSEIS is more than sufficient. We are concerned, nevertheless, that the DSEIS only addresses two alternatives, the no action alternative and the preferred alternative. We suggest that the final EIS should consider additional, alternative language options, each of which would achieve the same goal of restoring the original intent regarding application of the ACS.

We are also concerned that the preferred alternative may not fully achieve its intent, the elimination of ambiguity regarding application of ACS goals. The intent, as we understand it, is to correct a judicial misinterpretation which resulted in a requirement that each on-the-ground project meet ACS objectives. The solution needs to be language that plainly states that individual projects need not meet ACS objectives. The language used in the preferred alternative set forth on pages 18-19 of the DSEIS leaves some room for doubt. The proposed changes are to Page B-10, Paragraph 2 of the Northwest Forest Plan ROD, and the addition of a new paragraph on Page C-2 of the ROD. The thrust of the proposed clarification is that it is not intended "that site scale projects, in themselves, will fully attain ACS objectives." (Emphasis added). We strongly urge the elimination of the underlined words in this quote, as their inclusion suggests that site specific projects may be required to individually, at least partially, achieve ACS goals, even in the short term. The underlined language may also be interpreted to suggest that two or more projects cumulatively must fully achieve ACS goals. The language must not leave room for these further ambiguities to creep in.

Thank you for your consideration of these comments.

Very truly yours,

ASSN. OF OREGON COUNTIES

By: Robert Cantine
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APPENDIX D

Biological Assessment

October 2, 2003

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Biological Assessment of the
USDA Forest Service and USDI Bureau of Land Management
Land and/or Resource Management Plans
in the Northwest Forest Plan Area

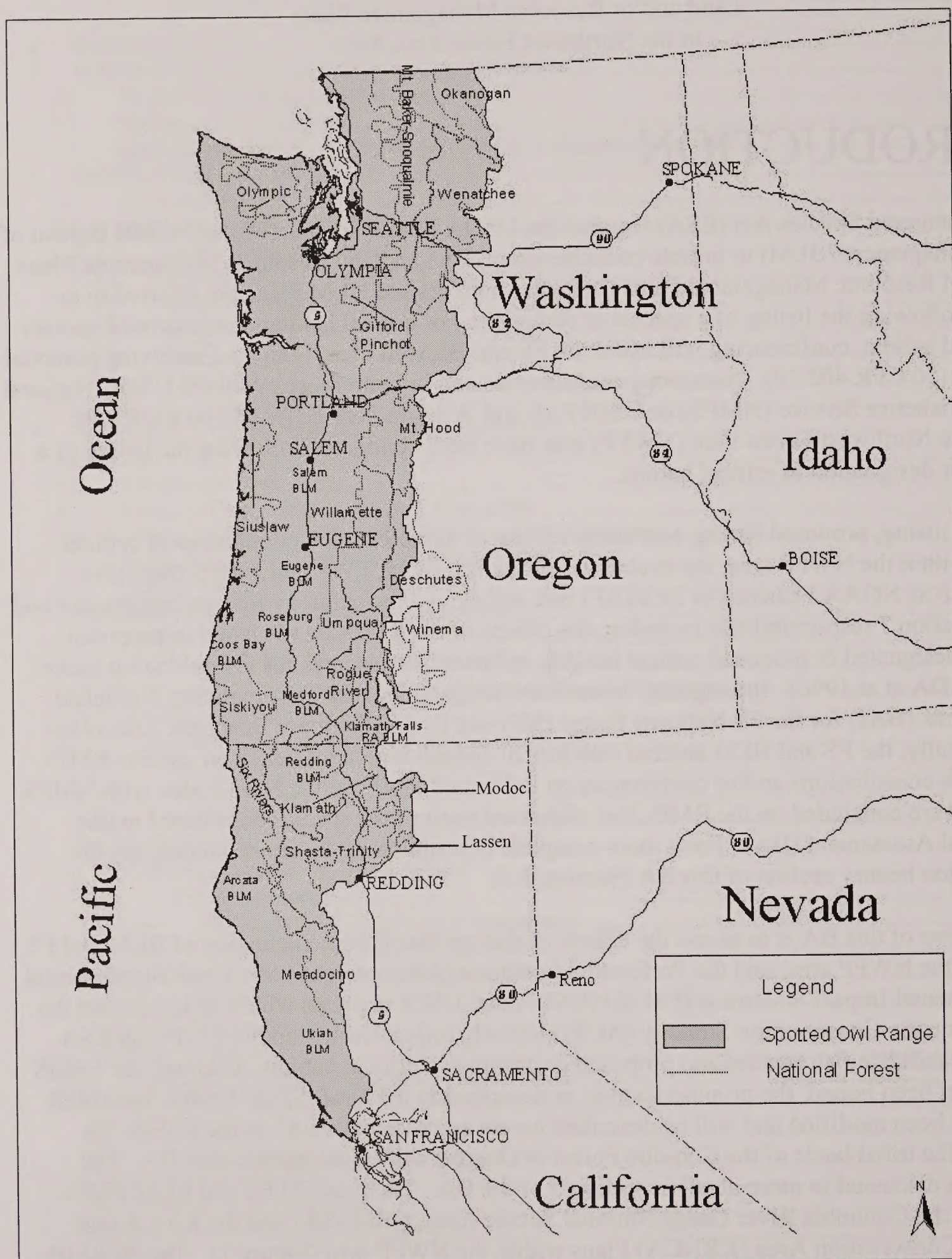
INTRODUCTION

The Endangered Species Act (ESA) requires the USDA Forest Service (FS) and USDI Bureau of Land Management (BLM) to initiate consultation on FS Land and Resource Management Plans and BLM Resource Management Plans (hereafter both FS and BLM Plans are referred to as RMPs) following the listing of a species or designation of critical habitat. For proposed species or critical habitat, conferencing will assist the FS and BLM in identifying and resolving potential conflicts (50 CFR 402.10). Numerous consultations and/or conferences with the USDC National Marine Fisheries Service (NMFS) or USDI Fish and Wildlife Service (FWS) on the RMPs within the Northwest Forest Plan (NWFP) area have been conducted following the listing of a species or designation of critical habitat.

With the listing, proposed listing, and status review of numerous fish populations or critical habitat within the NWFP area, the executives of the FS, BLM, FWS and NMFS (hereafter referred to as NOAA Fisheries or NOAAF) met and agreed to a strategy for meeting present and future Section 7 responsibilities regarding the effects of the RMPs on the listed or proposed species, designated or proposed critical habitat, and candidate species for federal listing under ESA (USDA et al 1996). Interagency teams were assigned the task of completing biological assessments (BAs) for the FS National Forest (NF) and BLM District or Resource Area plans. Subsequently, the FS and BLM entered into formal consultation/conference on various RMPs. Numerous consultations and/or conferences on individual RMPs in the NWFP area with NMFS or FWS were concluded on the RMPs that addressed most of the species considered in this Biological Assessment (BA). For a more complete description of the consultations, see the consultation history section of this BA (Section 3.1).

The purpose of this BA is to assess the effects of the continued implementation of BLM and FS RMPs in the NWFP area, and the Preferred Alternative (Alternative A) of a Final Supplemental Environmental Impact Statement (FSEIS) (USDA and USDI in press) which would amend the NWFP Aquatic Conservation Strategy (ACS) currently integrated within the RMPs, on ESA-listed or candidate fish species and proposed or designated critical habitat. Although the FSEIS has not yet been issued, the proposed action as described in the Draft SEIS (USDA and USDI 2003) has been modified and will be described herein as "Alternative A" in the FSEIS. In addition, the tribal lands of the Coquille Forest in Oregon will be included in this BA. The purpose is discussed in more detail in section 5 of the BA. There are 30 FS and BLM RMPs including the Columbia River Gorge National Scenic Area (CRGNSA) and the King Range National Conservation Area (KRNCA) Plans within the NWFP area (Figure 1). The 30 RMP actions are grouped or batched with the intent to summarize the previous assessments and consultations so they can be addressed in a consistent manner in subsequent NOAAF and FWS

Figure 1. Northwest Forest Plan Area



Biological Opinions (BOs). In addition to addressing previous consultations and conferences on the RMPs as outlined by the executive strategy for species and critical habitat, the BA addresses a Preferred Alternative (Alternative A) that would amend the 30 RMPs (USDA et al 1996).

The Secretaries of Agriculture and the Interior are proposing to amend the ACS portions of the RMPs except for the CRGNSA within the Northwest Forest Plan area. The CRGNSA Plan would be indirectly affected by the Preferred Alternative (Alternative A) since only the NF RMPs within the CRGNSA would be amended (see BA section 5.11 for details regarding CRGNSA). The Preferred Alternative (Alternative A) of the Final Supplemental Environmental Impact Statement for *Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Northern Spotted Owl* (USDA and USDI in press) is assessed and evaluated with the RMP actions previously assessed for ESA consultation and summarized in this BA. Under the amendment, land managers continue to be required to design projects to comply with applicable standards and guidelines (S&Gs) in Sections C and D of Attachment A in the Record of Decision (ROD) (USDA and USDI 1994b), and other applicable standards in Resource Management Plans. No further finding of ACS consistency is required. The amendment requires the project record to demonstrate how the agency used relevant information from applicable watershed analysis to provide context for project planning. The purpose of this Preferred Alternative (Alternative A) is discussed in more detail in section 5.2 of the BA.

SCOPE OF THE CONSULTATION OR CONFERENCE

The FS and BLM administrative units addressed in this BA are described in section 2.1. The listed or proposed species, designated or proposed critical habitat, and candidate species for federal listing under ESA considered in this BA are listed in section 2.2 as well as the status and federal register notice for each of the species or critical habitats. The species and/or critical habitats affected by each individual administrative unit are displayed in section 2.3.

FS and BLM Administrative Units

This BA addresses 30 FS and BLM RMPs in the Northwest Forest Plan area. The 30 RMPs consist of 19 National Forests (NFs), 9 BLM Districts or Resource Areas, the Columbia River Gorge National Scenic Area (CRGNSA) Plan and the King Range National Conservation Area (KRNCA). The 30 RMPs or Plans are as follows:

Bureau of Land Management:

<u>District</u>	<u>Resource Area</u>	<u>National Conservation Area</u>
Coos Bay	Arcata	King Range
Eugene	Klamath Falls	

Medford
Roseburg
Salem

Redding
Ukiah

Forest Service:

National Forest

Deschutes
Gifford Pinchot
Klamath
Lassen
Mendocino
Modoc
Mt. Baker-Snoqualmie
Mt. Hood
Okanogan
Olympic

National Forest

Rogue River
Six Rivers
Siskiyou
Shasta-Trinity
Siuslaw
Umpqua
Wenatchee
Willamette
Winema

National Scenic Area

Columbia River Gorge

Most of the administrative units are entirely within the NWFP area except for the CRGNSA, the following 9 National Forests (NFs) and 3 BLM Resource Areas (RAs), respectively: Okanogan, Wenatchee, Deschutes, Winema, Klamath, Lassen, Modoc, Shasta-Trinity and Mendocino NFs; and the Ukiah, Klamath Falls and Redding RAs. Two of these NFs, the Mendocino and Wenatchee, contain small NF areas located outside the NWFP boundary that will be assessed and included in this consultation. The FS non-NWFP areas included in this assessment are the Lake Red Bluff Recreation site on the Mendocino NF and approximately 25,000 acres of the Wenatchee NF. Additionally, the tribal lands of the Coquille Forest in Oregon will be included in this BA.

Species or Critical Habitat

There are 38 fish species or critical habitats being considered in this BA (Table 1). The 38 species or critical habitats consist of 26 listed species (4 endangered and 22 threatened), 4 anadromous fish ESU candidates for ESA listing, and 8 critical habitats (6 designated and 2 proposed). The majority of species and critical habitats are for anadromous fish ESUs, and therefore under the jurisdiction of NOAAF. The 33 species or critical habitats under NOAAF jurisdiction consist of 23 listed ESUs (4 endangered and 19 threatened), 4 anadromous fish ESU candidates for ESA listing, and 6 designated critical habitats for anadromous fish ESUs. The FWS jurisdiction applies to inland fish species that includes 3 bull trout DPSs and 2 proposed critical habitats for bull trout DPSs. The listing status of the species or critical habitats are provided by identifying the Federal Register notice and dates (Table 1).

Species/Critical Habitat Affected by Individual Administrative Units

Although there are 38 fish species or critical habitats being considered in this BA, the number of species and/or critical habitats affected by individual RMPs differs by administrative unit (Table 2). The individual plans require consultation for listed fish species (ESUs or DPSs) and

Table 1. The Evolutionarily Significant Units (ESU), Distinct Population Segments (DPS), designated or proposed critical habitat, and candidate ESUs considered in this BA.

Species	ESU, DPS, or Critical Habitat	Species Acronym	ESA Status	Federal Register Notice and Date
Chinook Salmon	California Coastal	CCC	Threatened	64 FR 50394 9/16/99
	Central Valley spring-run	CVSC	Threatened	64 FR 50394 9/16/99
	Sacramento River winter-run	SRWC	Endangered	59 FR 440 1-4-94
	Snake River Spring/Summer-run	SRSSC	Threatened	57 FR 14653 4/22/92
	Snake River Fall-run	SRFC	Threatened	57 FR 14653 4/22/92
	Upper Columbia River spring-run	UCRSC	Endangered	64 FR 14308 3/24/99
	Upper Willamette River	UWRC	Threatened	64 FR 14308 3/24/99
	Lower Columbia River	LCRC	Threatened	64 FR 14308 3/24/99
	Puget Sound	PSC	Threatened	64 FR 14308 3/24/99
	Central Valley fall and late fall-run	CVFC	Candidate	64 FR 50394 9-16-99
	Critical habitat for Sacramento River winter-run chinook salmon ESU	SRWC	Designated	58 FR 46944 9/3/93
	Critical habitat for Snake River Spring/Summer chinook salmon ESU	SRSSC	Designated	58 FR 68543 12/28/93
	Critical habitat for Snake River Fall chinook salmon ESU	SRFC	Designated	58 FR 68543 12/28/93
Coho Salmon	Puget Sound/Strait of Georgia	PSSGC	Candidate	60 FR 38011 7/25/95
	Lower Columbia River/Southwest Washington	LCRSWC	Candidate	60 FR 38011 7/25/95
	Central California Coast	CCCC	Threatened	61 FR 56138 10/31/96
	Oregon Coast	OCC	Threatened	63 FR 42587 8/10/98
	Southern Oregon/ Northern California Coast	SONCCC	Threatened	62 FR 24588 5/6/97
	Critical habitat for Central California Coast coho salmon ESU	CCCC	Designated	64 FR 24049 5/5/99
	Critical habitat for Southern Oregon/ Northern California Coast Coho ESU	SONCCC	Designated	64 FR 24049 5/5/99

Table 1 continued

Species	ESU, DPS, or Critical Habitat	Species Acronym	ESA Status	Federal Register Notice and Date
Chum Salmon	Hood Canal summer-run	HCSC	Threatened	64 FR 14508 3/25/99
	Columbia River	CRC	Threatened	64 FR 14508 3/25/99
Sockeye Salmon	Snake River sockeye	SRS	Endangered	56 FR 58619 11/20/91
	Critical habitat for Snake River sockeye salmon ESU	SRS	Designated	58 FR 68543 12/28/93
Steelhead	Upper Columbia River	UCRS	Endangered	62 FR 43937 8/18/97
	Lower Columbia River	LCRS	Threatened	63 FR 13347 3/19/98
	Snake River Basin	SRBS	Threatened	62 FR 43937 8/18/97
	Oregon Coast	OCS	Candidate	63 FR 13347 3/19/98
	Middle Columbia River	MCRS	Threatened	64 FR 14517 3/25/99
	Upper Willamette River	UWRS	Threatened	64 FR 14517 3/25/99
	Northern California	NCS	Threatened	65 FR 36074 6/7/2000
	Central California Coast	CCCS	Threatened	62 FR 43937 9/18/97
	Central Valley	CVS	Threatened	63 FR 13347 3/19/98
Bull Trout	Coastal-Puget Sound	CPSBT	Threatened	64 FR 58909 11/1/99
	Columbia River	CRBT	Threatened	63 FR 31647 6/10/98
	Klamath River	KRBT	Threatened	63 FR 31647 6/10/98
	Critical Habitat for Klamath River bull trout DPS	KRBT	Proposed	67 FR 71236 11/29/02
	Critical Habitat for Columbia River bull trout DPS	CRBT	Proposed	67 FR 71236 11/29/02

Table 2. Species and critical habitat affected by FS and BLM administrative units in NWFP. The acronyms for the species are listed in Table 1.

Administrative Unit	Listed Species	Designated Critical Habitat	Proposed Critical Habitat	Candidate Species
Columbia River Gorge NSA	LCRC, LCRS, CRC, CRBT, SRBS, SRS, SRSSC, SRFC	SRSSC, SRFC, SRS	CRBT	LCRSWC
Deschutes	CRBT		CRBT	
Gifford Pinchot	LCRC, LCRS, PSC, MCRS, CRBT, CPSBT		CRBT	LCRSWC, PSSGC
Klamath	SONCCC	SONCCC		
Lassen				
Mendocino	SONCCC, SRWC, CVSC, CCC, NCS, CVS	SONCCC, SRWC		CVFC
Modoc				
Mount Baker Snoqualmie	PSC, CPSBT			PSSGC
Mount Hood	LCRC, LCRS, MCRS, CRBT, UWRC		CRBT	LCRSWC
Okanogan	UCRSC, UCRS, CRBT		CRBT	
Olympic	PSC, CPSBT, HCSC			PSSGC, LCRSWC
Rogue River	SONCCC	SONCCC		
Six Rivers	SONCCC, CCC, NCS	SONCCC		
Siskiyou	SONCCC, OCC	SONCCC		OCS
Shasta-Trinity	SONCCC, CVSC, CVS	SONCCC		CVFC
Siuslaw	OCC			OCS
Umpqua	OCC			OCS
Wenatchee	UCRSC, UCRS, CRBT, MCRS		CRBT	
Willamette	UWRC, UWRS, CRBT		CRBT	
Winema	KRBT		KRBT	
Arcata	SONCC, CCC, NCS, CCCS	SONCCC		
Coos Bay	SONCC, OCC	SONCCC		OCS
Eugene	CRBT, UWRS, UWRC, OCC		CRBT	OCS
King Range NCA	SONCC, CCC, NCS, CCCS	SONCCC		
Klamath Falls	KRBT			
Medford	SONCCC, OCC	SONCCC		OCS
Redding	SONCCC, CVWC, CVSC			CVFC
Roseburg	OCC			OCS
Salem	LCRS, UWRS, UWRC, CRC, OCC, LCRC			LCRSWC, OCS
Ukiah	CCC, CCCC, NCS	CCCC		

designated critical habitat whereas the proposed critical habitat and candidate species (ESUs) require formal and informal conferencing, respectively. Table 2 displays the species and critical habitats affected by each FS or BLM RMP. The NWFP portions of the Lassen and Modoc NFs do not contain habitat for anadromous fish species because passage into the upper Sacramento River basin is blocked by Shasta dam and passage into the Klamath River basin is blocked by Iron Gate dam.

ENVIRONMENTAL BASELINE

The environmental baseline for this consultation includes descriptions of how the BLM and FS have been implementing the NWFP and the components of the ACS. The consultation history is described in section 3.1. Implementation of the RMPs is described in Section 3.2. Updates to categories of activities and analyses reflecting RMP and ACS implementation since the time of previous consultations are presented in this section. Environmental factors affecting the baseline are discussed in section 3.3.

Consultation History

Since the signing of the ROD for the NWFP in 1994 (USDA and USDI 1994b), the potential effects of the continued implementation of individual FS and BLM RMPs except the Modoc and Lassen NFs have been assessed and analyzed, individually or in a batch, for at least one or more of the ESA listed fish species, proposed fish species, candidate fish species or critical habitat considered in this assessment. In Northwest California, BAs were completed in 1995 for 4 NFs and 3 BLM resource area RMPs including the King Range National Conservation Area (KRNCA). Additionally, two NFs in California were determined to have no effect on any of the listed anadromous fish ESUs. In Oregon and Washington, 2 BAs were completed for the FS and BLM RMPs during 1997. An addendum to one Oregon and Washington BA was prepared in 1999. Consultation with NMFS was not concluded for the RMPs affecting the listed anadromous fish in the 1999 BA addendum. Based on the individual or batched BAs prepared for the FS and BLM RMPs in the NWFP area except for the 1999 BA addendum, numerous consultations and/or conferences with the NOAAF or FWS were concluded.

Ten consultations and/or conferences with the NOAAF or FWS were concluded on 28 RMPs during the 1997-2001 time periods (Table 3 and 4). Many of the NOAAF BOs listed in Table 3 were initially conference opinions (COs) that were eventually converted to BOs after a listing of an anadromous fish ESU. Descriptions of the general environmental baseline conditions in watersheds within the ESUs, DPSs, and designated or proposed critical habitat are described in prior RMP-level ESA consultation or conference records for the BOs and COs displayed in Tables 3 and 4, and are hereby incorporated by reference (USDA 1995b, 1995c, 1995d, 1995e, 2000; USDA and USDI 1997a, 1997b, 1998, 1999, USDC 1996a, 1996b, 1997b, 1997c, 1997d, 1998a, 1998c, 1998d, 1999, 2000b, 2000c, 2001; USDI 1997b, 1998, 2000a, 2000b, 2000c). Two conference opinions, one by each consulting agency, are still viable for the RMPs affecting the Oregon Coast steelhead ESU (USDC 1997b) and the proposed critical habitat for the Lost River and shortnose suckers (USDI 2000a) (Table 4).

Table 3. Previous Plan-Level BOs issued by NOAAF or USFWS addressing listed fish ESUs, DPSs and/or critical habitat (proposed or designated) for Administrative Units within the NWFP area. Highlighted rows pertain to Northwest Forest Plan area. The acronyms for the species are listed in Table 1.

BO Date/ Consulting Agency	ESU/DPS	Aquatic Conservation Strategy	National Forests/ National Scenic Area (NSA)	BLM District, Resource Area or National Conservation Area (NCA)
March 18, 1997 NOAAF	Umpqua River cutthroat trout ESU	Northwest Forest Plan	Siskiyou, Umpqua and Siuslaw	Coos Bay, Roseburg, and Eugene
June 20, 1997 NOAAF	CCCC; SONCCC	Northwest Forest Plan	Klamath, Shasta-Trinity, Mendocino, Six Rivers	Arcata, Redding, Ukiah, King Range NCA
July 9, 1997 NOAAF	SONCCC	Northwest Forest Plan	Rogue River, Siskiyou, Umpqua and Winema	Coos Bay and Medford
March 19, 1998 NOAAF	LCRS	Northwest Forest Plan	Gifford Pinchot Mt. Hood Columbia River Gorge NSA	Salem
June 4, 1998 NOAAF	CVS	PACFISH	Lassen	None
June 19, 1998 NOAAF (incorporates by reference the March 1, 1995 BO)	UCRS	Northwest Forest Plan and PACFISH	Okanogan Wenatchee	None
August 14, 1998 USFWS	CRBT; KRBT	PACFISH and INFISH	Deschutes, Okanogan, Wenatchee, Winema and Columbia River Gorge NSA	None
September 29, 1998 NOAAF	OCC	Northwest Forest Plan	Siskiyou Umpqua Siuslaw	Medford, Coos Bay, Eugene, Salem and Roseburg
August 6, 1999 NOAAF	Critical Habitat for SONCCC	Northwest Forest Plan	Rogue River Siskiyou Umpqua Winema	Coos Bay Medford
October 29, 2000 NOAAF	CVSC	PACFISH	Lassen	None
March 24, 2000 USFWS	shortnose sucker; Lost River sucker	INFISH	Winema	None

Table 3 continued

BO Date/ Consulting Agency	ESU/DPS	Aquatic Conservation Strategy	National Forests/ National Scenic Area (NSA)	BLM District or Resource Area
May 25, 2000 USFWS	CPSBT; CRBT; KRBT	Northwest Forest Plan	Deschutes; Gifford Pinchot; Mt. Baker/Snoqualmie; Mt. Hood; Okanogan; Olympic; Wenatchee; Willamette; Winema and Columbia River Gorge NSA	Eugene
December 22, 2000 NOAAF	CVS; CVSC	Sierra Nevada Forest Plan Amendment	Lassen	None
April 16, 2001 NOAAF	NCS; CCCS; CVS; CCC; CVSC; Critical Habitat for SONCCC; Critical Habitat for CCCC	Northwest Forest Plan	Klamath, Shasta-Trinity, Mendocino, Six Rivers	Arcata, Redding, Ukiah, King Range NCA

Table 4. Previous Plan-Level Conference Opinions (CO) issued by NOAAF or USFWS addressing candidate anadromous fish ESUs or proposed critical habitat for Administrative Units within the NWFP area.

CO Date/ Consulting Agency	ESU/DPS	Aquatic Conservation Strategy	National Forests	BLM District or Resource Area
March 18, 1997 NOAAF	Oregon Coast steelhead ESU	Northwest Forest Plan	Siskiyou, Umpqua and Siuslaw	Medford Coos Bay Eugene Salem Roseburg
March 24, 2000 USFWS	Proposed critical habitat for Lost River and shortnose suckers	Northwest Forest Plan and INFISH	Winema	None

There have been no significant changes to the RMPs since the dates of the Plan-level BOs and COs. This BA considered any amendments to the RMPs that have occurred since the last consultation on the RMPs. The Willamette, Olympic and Mt. Baker Snoqualmie NFs have not undergone an ESA consultation with NOAAF on their RMPs, therefore, any amendment affecting listed species was reviewed. Of the 30 administrative units in the NWFP area, 3 administrative units identified amendments to their RMPs that may affect the listed fish or critical habitat considered in this BA. The Deschutes, Mt. Baker Snoqualmie and Wenatchee National Forests each reported an amendment affecting listed species. Consultation, informal or

formal, was concluded with the appropriate consulting agency on all 3 of these amendments. Therefore, the FS and BLM believe the RMPs have not materially changed since the issuance of the Plan-level BOs and COs.

In 1993, the BA for alternative 9 (the selected alternative) of the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest related Species within the Range of the Northern Spotted Owl (USDA et al 1994a) determined the listed Sacramento River winter chinook salmon ESU as well as the 3 listed Snake River salmon ESUs would not be affected by the NWFP ACS. The 3 listed species or ESUs of the Snake River Basin are: Snake River fall chinook salmon; Snake River spring/summer chinook salmon; and Snake River sockeye salmon. The NOAAF concurred with the BA's no adverse affect determination for the 4 anadromous fish species ESUs listed as threatened or endangered within the range of the northern spotted owl. NOAAF stated that the species were not affected by Federal land management activities within the range of the northern spotted owl. Although the initial assessment of the NWFP ACS concluded no effect to the Snake River ESUs, the subsequent designation of the entire Columbia River as critical habitat for these species triggered a reassessment of those conclusions in this BA since one administrative unit governed by the NWFP ACS contains critical habitat. Also, the Sacramento River winter chinook ESU is being addressed herein because of a recreational area located outside the boundary of the NWFP. However, the NWFP portion of the FS and BLM administrative units within the Sacramento River Basin still do not affect the Sacramento River winter chinook salmon ESU.

The NWFP ROD provides an ACS for only a portion of the range of 2 bull trout DPSs and several anadromous fish ESUs. PACFISH and INFISH are also aquatic conservation strategies designed to minimize adverse effects to anadromous or inland native fish habitat, respectively. In 1995, the Deschutes, Okanogan and Winema NFs were amended by the INFISH aquatic conservation strategy, and the CRGNSA, Lassen and Okanogan NFs were amended by the PACFISH aquatic conservation strategy. Four consultations with NOAAF or FWS regarding these RMPs as amended by INFISH or/and PACFISH are identified in Table 3. Additionally, the interim PACFISH aquatic conservation strategy for the Lassen NF was replaced with a long-term conservation strategy for which consultation with NOAAF was completed in December, 2000 (Table 3).

Implementation of the RMPs

The record of decision (ROD), selecting the alternative 9, was effective on May 20, 1994 and amended all 29 FS and BLM RMPs except the CRGNSA plan within the range of the northern spotted owl (USDA and USDI 1994b). Implementation of the RMPs as amended by the ACS of the NWFP since 1994 is documented in FS and BLM monitoring and accomplishment reports of land and resource management. The results of these reports are discussed in the following sections: 3.21 Implementation monitoring, 3.22 Restoration accomplishments, 3.23 Watershed analyses, 3.24 Road system network, 3.25 Timber harvest and 3.26 Effectiveness Monitoring.

Implementation Monitoring

A regional-scale Northwest Forest Plan implementation monitoring (NFPIM) program has been in place since 1996. The purpose of the field monitoring program is to determine whether the Record of Decision (ROD) for the Plan and its corresponding S&Gs are being consistently followed across the range of the Plan. This program is conducted under the direction of the Regional Interagency Executive Committee (RIEC).

The method used to determine if activities are compliant with the NWFP S&Gs is to monitor randomly selected projects using a neutral assessment tool (questionnaire) administered by a jury or group leveling process (e.g. 12 Provincial teams which include members of the Provincial Advisory Committees). Provincial reports are submitted to a Regional team that summarizes the results into a regional report.

Since its inception in 1996 through 2001, 138 timber sales, 63 watershed analyses, 24 road projects, 18 restoration projects, 4 fuel reduction projects, and several other individual activities have been monitored. To date, there has been greater than 95% compliance with meeting the S&Gs for the monitored activities.

A summary of implementation monitoring findings from each report from 1996 to 2001 follows (Regional Implementation Monitoring Team 1997, 1998, 1999, 2000a, 2000b, 2002a, 2002b).

1996 Report

In FY 1996 the NFPIM Program addressed 42 timber sales. Results showed a high level of compliance (95 percent) with ROD S&Gs for the 42 timber sales (Table 5).

Table 5. Compliance of FY 1995 Timber Sales with S&Gs

Responses ¹	Count	Overall Percentage (%)	Applicable Percentage (%)
Meets	889	12.67	95.18
Fails to Meet	39	0.56	4.18
Fails, Not Capable of Meeting	6	0.09	0.64
Not Applicable	6,068	86.51	-
Blank (no response)	12	0.17	-
TOTAL	7,014	100.00	100.00

¹ Responses were categorized as to whether or not they were consistent with the S&Gs. Questions answered as "Yes" by the Provincial Monitoring Teams were considered to indicate compliance with S&Gs; the "No" questions were categorized as not indicating compliance. The overall percentage is based upon all responses - 7,014. The applicable percentage is based upon

only those 934 responses for which an S&G did apply (the sum of all "meets" and "fails" responses).

1997 Report

In FY 1997 the NFPIM Program addressed 40 timber sales, 17 roads, and 16 restoration projects. Tables 6, 7 and 8 present the results of the 1997 report. For the second consecutive year, results of the Regional NFPIM Program showed a high level of compliance with ROD S&Gs for timber sales (95 percent), roads (99 percent), and restoration projects (98 percent).

Table 6. Compliance of FY 1996 Timber Sales with S&Gs

Responses ¹	Count	Overall Percentage (%)	Applicable Percentage (%)	Adjusted Percentage (%)
Exceeded	34	0.7	3.2	3.6
Met	957	19.0	91.0	91.6
Not Met	41	0.8	3.9	2.5
Not Capable	19	0.4	1.8	2.3
Not Applicable	3,980	79.1	---	---
Blank (no response)	0	0.0	---	---
TOTAL	5,031	100.0	100.0	100.0

¹ Responses were categorized as to whether or not they were consistent with the S&Gs. The overall percentage is based upon all responses - 5,031. The applicable percentage is based upon only those 1,051 responses for which an S&G did apply (the sum of all "Meets" and "Fails" responses). The adjusted percentage uses weighted values to estimate the "region-wide" percentages that take into account the stratified selection process.

Table 7. Compliance of Roads with S&Gs

Responses ¹	Count	Overall Percentage (%)	Applicable Percentage (%)
Exceeded	4	0.3	1.0
Met	431	29.1	97.7
Not Met	6	0.4	1.4
Not Capable	0	0.0	0.0
Not Applicable	1,038	70.2	--
Blank (No Response)	0	0.0	--
TOTAL	1,479	100.0	100.0

¹ Responses were categorized as to whether or not they were consistent with the S&Gs. The overall percentage is based upon all responses - 1,479. The applicable percentage is based upon only those 441 responses for which an S&G did apply (the sum of all "applicable" responses).

Table 8. Compliance of Restoration Projects with S&Gs

Responses ¹	Count	Overall Percentage (%)	Applicable Percentage (%)
Exceeded	7	0.5	2.1
Met	312	19.9	95.4
Not Met	6	0.4	1.9
Not Capable	2	0.1	0.6
Not Applicable	1,241	79.1	--
Blank (No Response)	0	0.0	--
TOTAL	1,568	100.0	100.0

¹ Responses were categorized as to whether or not they were consistent with the S&Gs. The overall percentage is based upon all 1,568 responses. The applicable percentage is based upon only those 327 responses for which an S&G did apply (the sum of all "applicable" responses).

1998 Report

The FY 1998 NFPIM Program reviewed 24 randomly selected timber sales and associated new road construction. The results of the FY 1998 review of timber sales are found in Table 9. There was a high level of compliance with S&Gs for timber sales (96 percent for FY 1998).

Table 9 presents both the sample and the regional estimates. The regional estimates were calculated by applying the appropriate strata weights to the individual timber sale results. As in FYs 1996 and 1997, the FY 1998 program indicates a high overall level of compliance with NWFP S&Gs (96.7 percent the sum of exceeded, met, and not capable in Table 9).

Table 9. Compliance of Timber Sales with S&Gs

Responses ¹	Count	Overall Sample Percentage (%)	Applicable Sample Percentage (%)	Regional Percentage (%)
Exceeded	30	1.1	3.4	3.3
Met	803	29.6	90.9	92.2
Not Met	35	1.3	4.0	3.3
Not Capable	15	0.6	1.7	1.2
Not Applicable	1,829	67.4	---	---
Blank (no response)	0	0	---	---
TOTAL	2,712	100.0	100.0	100.0

¹ Responses were categorized as to whether or not they were consistent with the S&Gs. The overall percentage is based upon all 2,712 responses. The applicable percentage is based upon only those 883 responses for which an S&G did apply (the sum of all "applicable" responses). The regional percentage is computed based on the sample results weighted by the number of timber sales in each stratum.

1999 Report

The FY 1999 NFPIM Program reviewed 24 randomly selected timber sales and 12 watersheds. The results of the FY 1999 review of timber sales are found in Table 10. For the fourth consecutive year, results of the program show high levels of compliance with S&Gs for timber sales (97.9 percent for FY 1999).

Table 10. Compliance of Timber Sales with S&Gs

Responses ¹	Count	Overall Percentage (%)	Applicable Percentage (%)
Exceeded	17	0.8	2.5
Met	621	28.8	92.1
Not Met	14	0.6	2.1
Not Capable	22	1.0	3.3
Not Applicable	1,486	68.8	-
Total	2,160	100.0	100.0

¹ Responses were categorized as to whether or not they were consistent with the S&Gs. The overall percentage is based upon all 2,160 responses. The applicable percentage is based upon only those 674 responses for which an S&G did apply (the sum of all "applicable" responses).

Key Watersheds

There were seven key watersheds reviewed. Six of the watersheds reviewed had avoided road construction. Six watersheds had reduced and one had maintained road net amount. All seven watersheds had decommissioned roads posing the highest risks to riparian and aquatic systems. The remainder of the units reported these questions were not applicable to their watersheds.

Of the 1861.2 system road miles existing in 1994, 365.5 (approximately 20%) have been decommissioned and/or improved and 13.3 (.7%) new miles have been added to BLM and FS lands in these watersheds. Of the 127 non-system road miles existing in these watersheds in 1994, almost 12 miles (approximately 9%) have been decommissioned and/ or improved, and almost 11 miles are new (8.6%). Table 11 shows the road mileage from 1994 to 1999 in Key Watersheds.

Table 11. Road Mileage from 1994 to 1999 in Key Watersheds

Agency	System Road Mileage				Non-system and Temporary Road Mileage				Net since 1994
	Existing in 1994	New since 1994	Decom ¹ since 1994	Improved/ Restored since 1994	Existing in 1994	New since 1994	Decom ¹ since 1994	Improved/ Restored since 1994	
FS	1812.2	13.3	84	274	97	10.9	11.6	0	- 71.4
BLM	49	0	0	7.5	30	0	0.25	0	- 0.25

¹Miles of decommissioned or obliterated roads

Watershed Analyses and Riparian Reserves

All units, except one, had completed their Watershed Analyses (WA). The one exception had completed a Watershed Assessment instead of an analysis because of minimal federal ownership. Four units had planned to update their WA by FY 2002 and the remaining units did not identify a schedule for updating.

Five of twelve watersheds had adjusted interim Riparian Reserve (RR) boundaries and the remaining units did not adjust the boundaries because interim boundaries were found to be adequate or no actions were undertaken requiring adjustment. Of the five watersheds that had changed their RR widths, each had completed a National Environmental Policy Act (NEPA) document for the changes, mostly based on the WA.

All units had identified restoration opportunities in their watersheds. Four watersheds reported that the priority for upgrading stream crossings had been based on risk to ecological value; seven watersheds said some; and one responded none.

All units reported taking management actions that have contributed to watershed restoration and ACS objectives. The most prevalent were road closures, culvert replacements, and riparian plantings. Seven of the watersheds reviewed reported that all habitat restoration activities had contributed to ACS objectives; four watersheds said some; and one said not applicable. Responses for eight watersheds indicated that watershed restoration projects had been designed to protect long-term ecological integrity, conserve genetic integrity of native species and contribute to attainment of ACSOs; for three watersheds the response was some; and for one the response was not applicable because no activities had been initiated in the watershed.

2000 Report

Two watersheds were selected for each of twelve provinces in the Northwest Forest Plan area. Program results showed:

- Watershed analyses were completed for 21 of 24 watersheds and two were in progress
 - None of the watershed analyses had been updated
- Widths of Riparian Reserves were changed in two of 24 watersheds
 - In one watershed widths were increased and modified (not specified whether wider or narrower) in another
 - Widths were modified at the project level and not at the watershed scale
 - Changes were evaluated and documented in timber sale NEPA documents
- Miles of system roads were reduced 4% (82.2 miles) for 13 Key Watersheds
- Non-system roads were reduced 5.9% (11.3 miles) for six Key Watersheds
- Road management or transportation plans had not been prepared for roads specifically in Riparian Reserves
- Assessments were completed for 19 of 22 watersheds containing Late Successional Reserves (LSRs)
 - Assessments were ongoing in two of the three watersheds containing LSRs
- Many projects were designed with specific LSR objectives, but some were designed only to meet guidelines
- The hierarchy of land allocations were applied as directed in the ROD
- Fourteen of fifteen watersheds sampled that contained Matrix land allocations met the S&G requiring retention of old-growth fragments in watersheds where little remains
 - Wildfire destroyed all except 9% of late-successional habitat in the other
- A high degree of variation was found in how the field units perceived and used the WA process to:
 - Report site-specific Aquatic Strategy compliance of project, activities, and programs before and after the ROD
 - Provide adequate information for the decision-maker to determine if proposed and certain existing projects, activities, and programs are consistent with ACS objectives
 - Provide enough information for recreation projects, programs, or facilities planned, implemented or both since 1994 for the decision-maker to determine that the project or management action meets or does not prevent attaining Aquatic Strategy objectives
 - Provide evaluation and mitigation for existing recreation facilities and roads in Riparian Reserves, if any, to ensure they do not prevent and, to the extent practicable, contribute to attaining Aquatic Strategy objectives

2001 Report

In 2001, the portion of the NFPIM program conducted at the field level was designed to sample 24 randomly selected 5th field watersheds (two per province) and 24 specific projects (one per

randomly selected watershed) (Baker 2002). Three project and watershed reviews in eastern Washington were canceled because of the extreme fire situation.

The 2001 monitoring results:

- Watershed analyses were completed for 18 of 21 5th field watersheds
 - Three analyses had been updated
- Riparian reserve widths had not been modified since 1994 in any watershed
- Road mileages were reduced 11 percent and 6.9 percent in Key Watersheds (12) and 5th field watersheds (15), respectively
- Project reviews resulted in 98% overall compliance with S&Gs
 - Percent compliance of the 21 projects ranged from 91 to 100 with 13 projects being 100 percent compliant
 - Adverse biological effects associated with instances of noncompliance appeared to be minimal at the regional scale. Where noncompliance occurred, the local effects were judged to be generally low to moderate.

Table 12. Road Mileage From 1994 to 2001 in Key Watersheds

Activity	# of Watersheds	Total Miles
1994 System Roads	12	1,752.8
New Roads	2	2.2
Decommissioned	11	197.7
Improved or Restored	6	39.3
2001 System Roads	12	1557.4

Restoration

Restoration is one of the primary components of the NWFP ACS. Restoration accomplishments by the FS and BLM administrative units are summarized for various time periods in Table 13. In contrast, the accomplishments presented in Tables 11 and 12 for road decommissioning are only for the specific watersheds reviewed by the regional implementation monitoring program in 1999 and 2001. The restoration accomplishments for the Oregon and Washington administrative units are displayed for a four year period, 1998-2001; whereas, the California administrative units, the Klamath, Mendocino, Six Rivers, Shasta-Trinity, Arcata, Redding and Ukiah NFs, display accomplishments for an eight year period, 1994-2001 (Table 13). The 1994-1997 restoration accomplishments for the Oregon and Washington administrative units were included in previous RMP consultations (Table 3) or are displayed in the 1999 addendum (USDA and USDI 1999) to the 1997 BA (USDA and USDI 1997a). It should be noted that the restoration accomplishments for the King Range National Conservation Area are included with the Arcata administrative unit. Data was not collected for the Modoc and Lassen NFs since the listed species or critical habitat addressed in this BA are not affected by those Forests RMPs.

Table 13 Summary of aquatic restoration accomplishments by FS and BLM administrative units during a four year period, 1998-2001, except for Klamath, Mendocino, Six Rivers, Shasta-Trinity, Arcata, Redding and Ukiah units that display accomplishments for an eight year period, 1994-2001. The values for Arcata administrative unit include the King Range National Conservation Area. The acronym "ND" means no data available.

<i>Administrative Unit</i>	<i>Instream Structures (mi.)</i>	<i>Instream Passage (mi.)</i>	<i>Riparian (ac.)</i>	<i>Riparian (mi.)</i>	<i>Upland (ac.)</i>	<i>Decommissioned Roads (mi)</i>	<i>Road Improved (mi.)</i>	<i>Wetland Fresh (ac.)</i>
<i>Columbia River Gorge NSA</i>	3	0	375	0	0	6	3	137
<i>Deschutes</i>	26.3	0.7	513	30.5	529	104.3	15.4	207
<i>Gifford Pinchot</i>	178.3	1.1	1508	21.7	11	285.8	193.3	0
<i>Klamath</i>	325	ND	ND	ND	2907	136.2	ND	ND
<i>Lassen</i>	ND	ND	ND	ND	ND	ND	ND	ND
<i>Mendocino</i>	67	ND	ND	ND	567	62	ND	ND
<i>Modoc</i>	ND	ND	ND	ND	ND	ND	ND	ND
<i>Mount Baker Snoqualmie</i>	8.4	0.5	13	0	1	54.4	137.6	0
<i>Mount Hood</i>	50.3	24.1	176	13.3	309	42.4	16.1	4
<i>Okanogan</i>	0.6	0.2	15	1.3	47	24.2	19.2	0
<i>Olympic</i>	0.8	4.3	82	9.9	368	46.7	33.9	0
<i>Rogue River</i>	44.5	55	628	0	99	26.5	12.9	1
<i>Six Rivers</i>	120	ND	ND	ND	711	137	ND	ND
<i>Siskiyou</i>	62.8	39	2833	0	0	57.7	0	0
<i>Shasta-Trinity</i>	244	ND	ND	ND	1980	112.4	ND	ND
<i>Siuslaw</i>	40.2	0	70	1.9	0	34.4	10.6	0
<i>Umpqua</i>	12.3	3	11	2.3	4099	85.6	110	0
<i>Wenatchee</i>	8.3	27	337	63.6	4	91.9	92.2	18
<i>Willamette</i>	18	0	613	38.7	1784	43.4	65.1	7
<i>Winema</i>	0.3	0	0	0	1	150.1	0.2	0
<i>Arcata</i>	ND	ND	ND	ND	ND	33.5	ND	ND
<i>Coos Bay</i>	12.2	25.1	1533	0.3	0	28.8	2.1	0
<i>Eugene</i>	7.7	8.2	11	3.1	0	5.3	0.9	0

Table 13 continued

<i>Administrative Unit</i>	<i>Instream Structures (mi.)</i>	<i>Instream Passage (mi.)</i>	<i>Riparian (ac.)</i>	<i>Riparian (mi.)</i>	<i>Upland (ac.)</i>	<i>Decommissioned Roads (mi)</i>	<i>Road Improved (mi.)</i>	<i>Wetland Fresh (ac.)</i>
<i>Klamath Falls</i>	0	0	273	1.5	738	0.3	1.4	3
<i>Medford</i>	5.3	147.3	463	6.3	4	37.6	173.2	0
<i>Redding</i>	ND	ND	ND	ND	ND	21.9	ND	ND
<i>Roseburg</i>	4.3	33.8	11	0	0	14	62.2	0
<i>Salem</i>	12.1	9.5	1606	8	12	127.8	52	0
<i>Ukiah</i>	0.5	0	0.5	0.8	0	0	0	0
<i>Totals</i>	1252.2	378.8	11071.5	203.2	14171	1770.2	1001.3	377

Definitions:

Instream Structure: Miles of stream treated to the nearest tenth of a mile. Includes actions designed to change or modify stream complexity and structure, including but not limited to placement of large woody debris, construction of weirs/deflectors, creation of pools, placement of boulders, rock gabions, gravel placement, development or improvement of side channels, alcoves, or other actions designed to improve stream structure.

Instream Passage: Miles of stream accessed to the nearest tenth of a mile. Includes actions designed to protect and improve fish passage for juvenile or adult fish including but not limited to: culvert removal, culvert upgrade, fish ladders improved or installed, irrigation diversions, fish screens.

Riparian acres: Acres treated to the nearest acre. Includes actions designed to improve, restore, or maintain quality and/or conditions of riparian zone vegetation; including but not limited to planting, fencing, off channel watering, beaver management, invasive plant control, livestock rotation or other management, stand conversion.

Riparian miles: Miles of stream within the treated area to the nearest tenth of a mile. Includes actions designed to improve, restore, or maintain quality and/or conditions of riparian zone vegetation; including but not limited to planting, fencing, off channel watering, beaver management, invasive plant control, livestock rotation or other management, stand conversion.

Upland: Acres treated to the nearest acre. Includes actions designed in upland areas to minimize risk to riparian/aquatic system health and functions; including but not limited to: slope stabilization/ revegetation, silvicultural treatments, livestock exclusion fencing.

Roads decommissioned: Miles of roads decommissioned to the nearest tenth of a mile. Includes actions designed to make roads hydrologically stable and self-maintaining. Actions may range from full obliteration to water barring along with culvert removal.

Roads improved: Miles treated to the nearest tenth of a mile. Includes actions/activities designed to reduce sediment and improve stability or to allow more natural functioning of stream and flood plain - including but not limited to drainage, upgrades, stabilization, and relocation.

Wetlands (Freshwater): Acres treated to the nearest acre. Activities designed to create, maintain, or restore freshwater wetland habitat.

Watershed Analysis

Watershed analysis (WA) is one of the primary components of the NWFP ACS. WA is required for Key Watersheds, roadless areas in Non-Key Watersheds and Riparian Reserves before initiating actions except for minor actions. Sixteen administrative units have completed watershed analyses for 90% or more of the federal land area covered by their RMPs including 7 units with 100% accomplishment (Table 14 and Figure 2). Watershed analyses have been completed for 80-89% and 50-79% of the RMP federal land area for 4 and 4 administrative units, respectively (Table 14). Three administrative units have completed WA for less than 50% of their unit area. WA accomplishment data was not compiled for the Modoc and Lassen NFs since the listed species or critical habitat addressed in this BA are not affected by those Forest RMPs. The WA accomplishments for the King Range National Conservation Area are included in the values for the Arcata administrative unit.

WA has been completed by the administrative units for the vast majority of Key Watersheds in the NWFP area. The CRGNSA and the Ukiah Resource Area are the only units that don't have any designated Key Watersheds. Watershed analyses has been completed for 100% of the Key Watersheds on 19 administrative units (Table 14 and Figure 3). Six administrative units have completed watershed analyses for 67-91% of their Key Watershed areas (Table 14). Small federal land ownership, lack of cooperators, and/or lack of project activity made these key watersheds a low priority for WA.

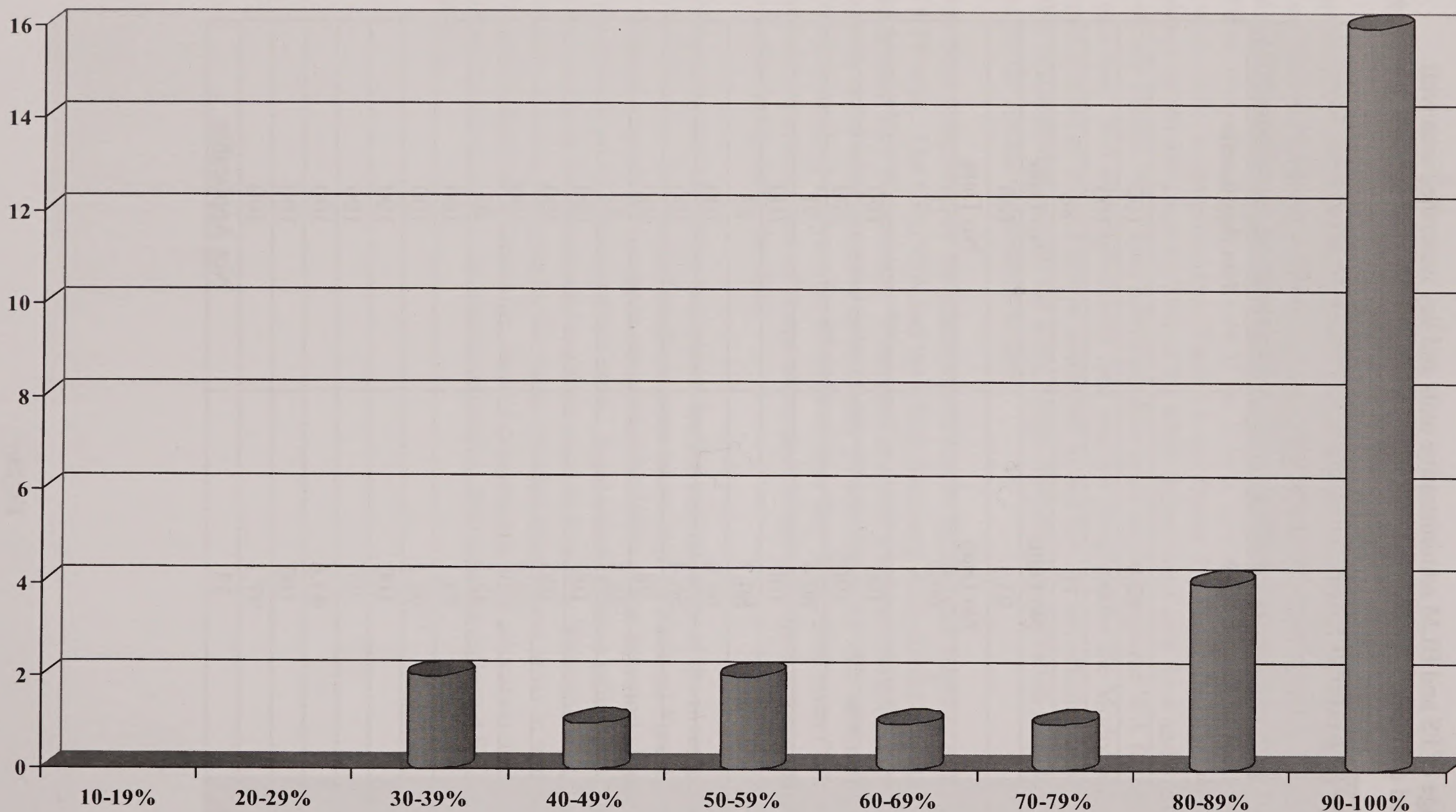
Watershed analyses have been completed for the vast majority of the inventoried roadless areas in the NWFP area. Inventoried roadless areas occur only on National Forest lands in the NWFP area. Watershed analyses has been completed for 100% of the inventoried roadless areas in non-Key Watersheds on 10 administrative units. Eight administrative units have not completed watershed analyses for inventoried roadless areas in non-Key Watersheds. Like Key Watersheds, WA is a low priority for many inventoried roadless areas in non-Key Watersheds due to small federal land ownership, lack of cooperators, land allocation designation, and/or lack of planned project activity. As mentioned above, data was not collected for the Modoc and Lassen NFs.

Table 14. Percentage of FS and BLM administrative units and key watershed area with completed watershed analyses.

Administrative Unit	Federal Land Area with Completed Watershed Analyses (%)	Key Watershed Area with Completed Watershed Analyses (%)
Columbia River Gorge National Scenic Area	83.3	Not Applicable
Deschutes	82.9	100
Gifford Pinchot	99.1	100
Klamath	71	86
Lassen	No Data	No Data
Mendocino	93.1	100
Modoc	No Data	No Data
Mount Baker Snoqualmie	66.2	71
Mount Hood	100	100
Okanogan	100	100
Olympic	80.4	91
Rogue River	100	100
Six Rivers	80.7	85
Siskiyou	99.9	100
Shasta-Trinity	56.4	100
Siuslaw	98	100
Umpqua	98.5	82
Wenatchee	100	100
Willamette	100	100
Winema	55.7	100
Arcata	33.5	67
Coos Bay	93.1	100
Eugene	96.1	100
Klamath Falls	100	100
Medford	93	100
Redding	43.6	100
Roseburg	100	100
Salem	97.1	100
Ukiah	37	Not Applicable

■ Figure 2. Histogram Displaying Percentage Classes of Land Area with Completed Watershed Analysis by Numbers of Forest Service and Bureau of Land Management Administrative Units in the Northwest Forest Plan Area

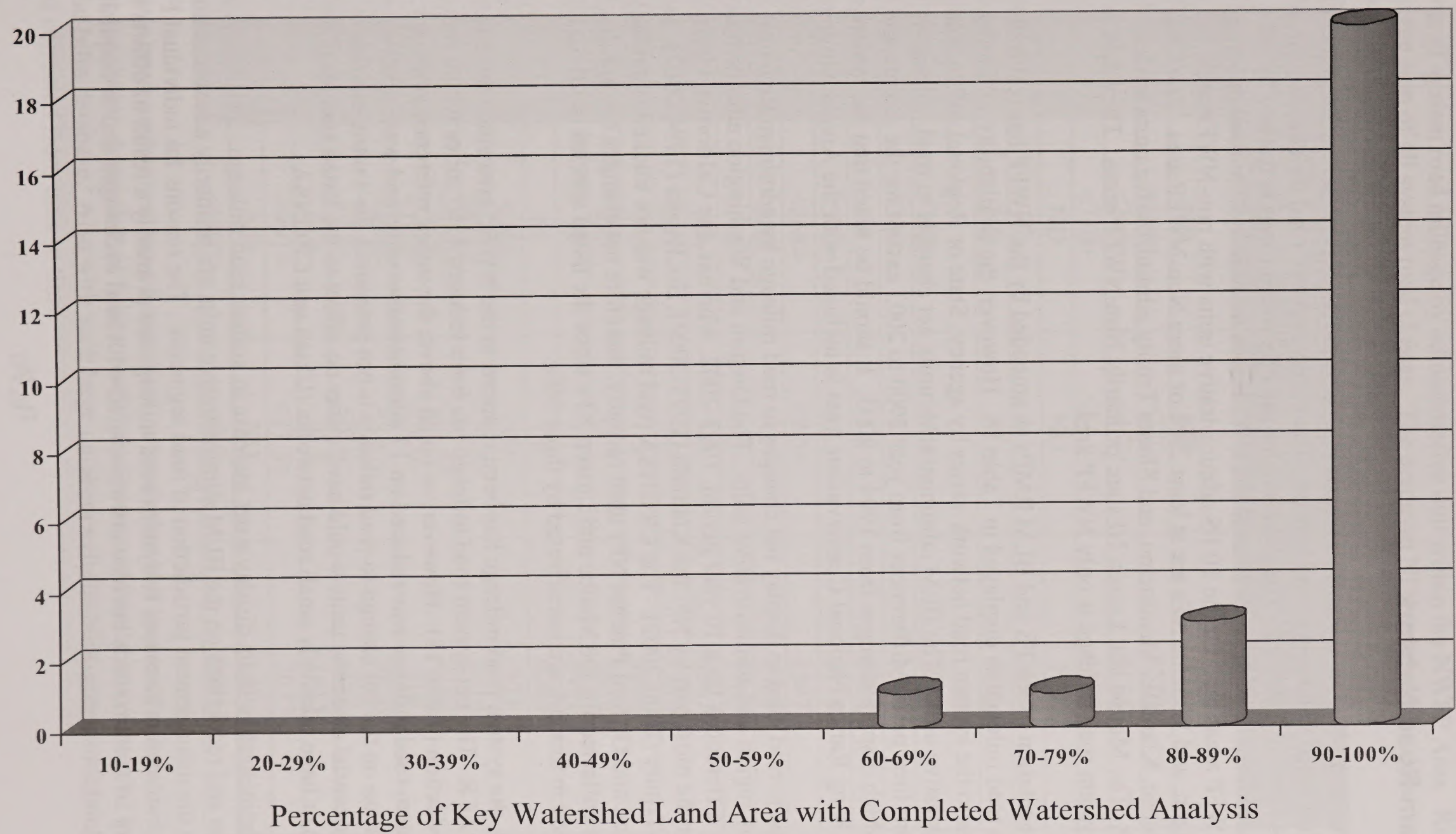
Number of Forest Service and Bureau of Land
Management Administrative Units



Percentage of Federal Land Area with Completed Watershed Analysis

■ **Figure 3. Histogram Displaying Percentage Classes of Key Watershed Land Area with Completed Watershed Analysis by Numbers of Forest Service and Bureau of Land Management Administrative Units in the Northwest Forest Plan Area**

Management Administrative Units



System Road Network

NOAAF and FWS have identified roads as one of the most pervasive management activities affecting listed fish species and habitat. The current system road mileage for the administrative units is listed in Table 15. The database for the FS system roads is tracked by NFs, therefore the databases for NFs with lands outside the NWFP area include system road mileage from these non-NWFP areas too. Of the 10 FS administrative units with non-NWFP area, the Deschutes, Okanagon, and Winema NFs are at least 28% or more Non-NWFP area. The CRGNSA, Wenatchee, Klamath, Mendocino, and Shasta Trinity administrative units are less than 5% Non-NWFP. The Modoc and Lassen NFs are primarily Non-NWFP areas. The BLM administrative units system road mileage is only NWFP area.

Implementation of the FS and BLM RMPs as amended by the NWFP has resulted in changes to system road mileage as displayed in Table 15. However, the availability of databases to display changes to the system road network varies by agency, State or Regional office, and individual administrative units. The BLM administrative units net changes to road mileage in Table 15 represent time period differences from year 2000 to 2003 except for the Arcata and Redding units which display changes from 1994 to 2003. It should be noted that the system road mileage for the King Range National Conservation Area is included with the Arcata administrative unit.

The time period used to display net changes to road mileage by administrative unit for the FS differ by region and administrative units. The Oregon and Washington administrative units display differences for a 10 year period, 1993-2002; whereas, the California administrative units vary for the most part by NF: the Klamath (1993-2002), Six Rivers (1994-2002), Mendocino and Shasta-Trinity (2000-2002). The CRGNSA road mileage was not tracked separately from the Mt. Hood and Gifford Pinchot NFs until recently, therefore net changes are not displayed. Data was not collected for the Modoc and Lassen NFs since the listed species or critical habitat addressed in this BA are not affected by those NFs.

Overall, the system road mileage has been reduced in the NWFP area since the adoption of the NWFP ACS. The net system road mileage has been reduced 4307 miles which represents a 4.7% reduction (Table 15). However, as noted above, the initial reference years are variable. The system road mileage was reduced on 17 administrative units and was increased on 9 units. Information on the net change to road mileage is not presented for 4 units but this is inconsequential since the units would have either no affect to the listed species (Lassen and Modoc) or have relatively small road networks (Ukiah and CRGNSA).

Nine administrative units display a net increase in system road mileage. The relatively large increases and reductions on the BLM administrative units are primarily a result of an effort to validate the management jurisdiction of road segments. The reasons for individual FS administrative unit increases to system road mileage are primarily a result of efforts to update the inventory of system roads but also are associated with land exchanges and/or acquisitions of private land for some administrative units.

Table 15. Status of system road mileage by administrative unit within the NWFP Area. Road miles represent the sum of all system road classes. The acronym ND represents no data. Negative values are displayed within the < > symbols.

Administrative Unit	System Road Network Changes		Current System Road Network (mi)
	Net Mileage	Net Percentage	
Columbia River Gorge NSA	ND	ND	138
Deschutes	<194>	<2.2>	8529
Gifford Pinchot	<205>	<4.7>	4114
Klamath	<730>	<14.9>	4177
Lassen	ND	ND	ND
Mendocino	27	1.1	2491
Modoc	ND	ND	ND
Mount Baker Snoqualmie	<343>	<11.4>	2654
Mount Hood	<339>	<8.7>	3566
Okanogan	38	1.4	2706
Olympic	<300>	<12.1>	2178
Rogue River	<268>	<9.5>	2547
Six Rivers	280	10.7	2903
Siskiyou	<186>	<6.3>	2765
Shasta-Trinity	104	1.6	6547
Siuslaw	<243>	<9.6>	2298
Umpqua	<73>	<1.5>	4806
Wenatchee	585	11.5	5652
Willamette	73	1.1	6491
Winema	61	1.0	6283
Arcata	<34>	ND	ND
Coos Bay	<872>	<29.2>	2114
Eugene	<705>	<24.4>	2182
Klamath Falls	<129>	<28.9>	319
Medford	<455>	<8.6>	4826
Redding	<22>	<8.4>	239
Roseburg	614	20.5	3615
Salem	<991>	<27.3>	2637
Ukiah	ND	ND	36
TOTAL	<4307>	<4.7>	86813

Corrections have been made to existing Forest Service roads that had incorrect mileages recorded in the database. A number of "ghost roads" that were previously uninventoried have entered into the Infra database. Also with such large databases on the NFs, errors are going to be uncovered and corrected from time to time.

Timber Harvest

The Northwest Forest Plan assumed that 90 percent of the early decades PSQ would come from late-successional and old growth forest, much of it through regeneration harvest. Individual RMPs outline assumptions for the amount and timing of silvicultural prescriptions such as thinning, partial cutting, and regeneration harvesting. The planning assumptions are based on the type of forests and the mix of older and younger forests available for harvest within each administrative unit. Achievement of Probable Sale Quantities for the individual administrative units, and for the Northwest Forest Plan area as a whole, are contingent on the ability to implement the full range of silvicultural prescriptions outlined in individual RMPs.

The Northwest Forest Plan established the term “Probable Sale Quantity” (PSQ) for estimates of average annual timber sale levels likely to be achieved. The Northwest Forest Plan FSEIS (Chapter 3&4, Page 267) addressed the potential for the PSQ to change as National Forest and BLM District plans were completed or revised:

“Sustainable sale estimates will be made using more refined data and procedures available when Draft Forest and District Plans are completed or current plans are revised.”

The Northwest Forest Plan FSEIS (Chapter 3&4, Pages 266 and 268) estimated the PSQ at 958 million board feet (MMBF), plus an additional 10 percent volume estimated in “other wood” (cull, sub-merchantable, firewood, and other products) for a total of 1.1 billion board feet. By 1998, PSQ across the Northwest Forest Plan area was reduced by 15 percent, to 811 MMBF. Revised Riparian Reserves acreage estimates at the local administrative unit level, was the single largest factor for the reductions in PSQ. It was determined that more of the landscape was in Riparian Reserves and therefore not available to contribute to the PSQ.

Since the adoption of the NWFP in 1994, the actual timber sale offerings have been less than the annual PSQ for each year. Since 1999, the agencies’ offerings have ranged from 148 mmbf to 400 mmbf (Figure 4). The reduction in sale offerings is the result of appeals and protests on individual projects; enjoined BOs in the Pacific Coast Federation of Fisherman’s Association v. National Marine Fisheries Service 71 F. Supp.2d 1063, 1069 (W.D. Wash. 1999) litigation; and, implementation of the Survey and Manage mitigation measures, among other reasons.

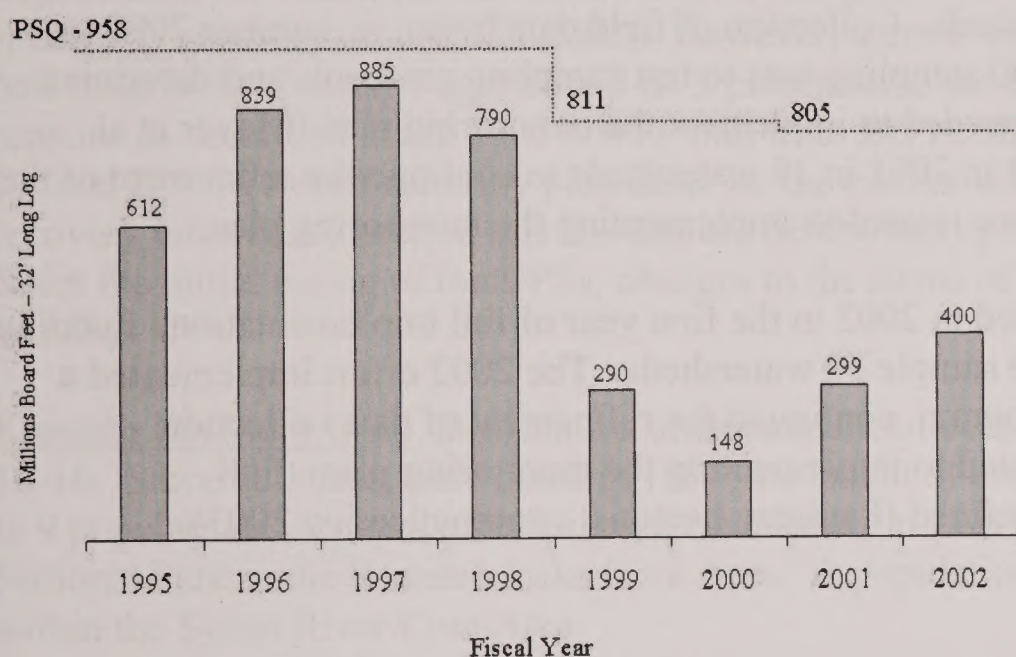
The FSEIS for the NWFP area and previous BAs for the RMPs displayed and discussed how the PSQs at the NWFP and individual RMP levels were reduced by the adoption of the NWFP. For example, the PSQ was reduced by 65 to 93% for the RMPs in Oregon and Washington. Additional information regarding PSQs for individual RMPs can be obtained from the previous BAs and BOs (Table 3).

Effectiveness Monitoring

The Northwest Forest Plan (NWFP) includes an Aquatic Conservation Strategy (ACS) that requires monitoring of aquatic ecosystems (USDA and USDI 1994b). The Aquatic and Riparian

Effectiveness Monitoring Plan (AREMP) was developed to fulfill this requirement. The final monitoring plan was approved in March 2001. The monitoring plan was designed to assess the condition of aquatic, riparian, and upslope ecosystems; develop ecosystem management decision support models to refine indicator interpretation; develop predictive models to improve the use of monitoring data; provide information for adaptive management by analyzing trends in watershed condition and identifying elements that result in poor watershed condition; and provide a framework for adaptive monitoring at the regional scale (Reeves et al. 2001). Monitoring is conducted at the subwatershed scale (USGS 6th-field hydrologic unit code). Subwatersheds are approximately 10,000-40,000 acres in size.

Figure 4. Timber Sale Volume Offered in Comparison to PSQ, 1995-2002



Sampling a minimum of 50 subwatersheds annually in the Forest Plan area will support regional analyses of ACS effectiveness. Over a five-year period, a total of 250 watersheds would be sampled (approximately 10% of the estimated number of subwatersheds). Post-sampling stratification will allow an evaluation at the subregional scale (e.g., provinces, river basins, National Forests, BLM districts) after five years. The AREMP conceptual framework allows more intense sampling than this, if managers wish to dedicate resources to deduce the Forest Plan's effectiveness at smaller spatial scales. Generally at least 50 units would need to be sampled at the scale desired to provide the necessary statistical rigor.

Under the AREMP conceptual framework, watersheds are stratified into three primary subsystems (channel, riparian, and upslope), each containing an array of physical and biological indicators that define its condition. Watershed condition is assessed by analyzing indicator values using a decision support model (DSM) incorporating relationships developed by provincial and regional experts. Results will be presented in the form of frequency distributions of the regional aggregation of watershed condition. Status and trend of individual indicator values will also be reported. Trend will be assessed by evaluating status of individual

watersheds and indicators over time. If the ACS is effective, the frequency distribution of watersheds or indicators should shift towards the better condition categories. Because the watershed processes, upon which the Forest Plan is based, operate over long timeframes (decades to centuries), trends may not be observed for 10-20 years or longer. Reports on status can be generated every year, but meaningful trends are more likely to be detected on a decadal timeframe. Depending on the intensity of sampling selected by agency managers, insight about ACS effectiveness at subregional scales or upon certain management practices could be available sooner.

A pilot project was conducted during the 2001 field season to test whether intensive sub-sampling could adequately characterize watersheds and to establish a data quality assurance program. Protocols for conducting upslope and riparian vegetation and roads analyses were also developed. Finally, a decision support model was constructed to evaluate the condition of individual sample reaches and watersheds. Collection of field data began in summer 2000 in four watersheds. The goal of the 2000 sampling was to test sampling protocols and determine the funding level and crew structure needed to implement the monitoring plan (Moyer et al. 2001). A pilot project was conducted in 2001 in 16 watersheds to continue the refinement of the protocols and to answer other questions related to implementing the monitoring plan.

Twenty-three watersheds were sampled in 2002 in the first year of full implementation. Funding was not sufficient to attain the goal to sample 50 watersheds. The 2002 effort implemented a quality assessment/quality control program, continued the refinement of data collection protocols, and resolved questions related to implementing the monitoring plan. Full implementation program costs were refined (Lanigan, personal communication 2003).

Environmental Factors

In the FSEIS for the proposed ACS amendment (USDA and USDI in press), the agencies considered whether large wildland fires, floods, droughts or El Niño weather patterns occurring since 1994 changed the Affected Environment or Environmental Consequences described in the FEMAT report (USDA et al. 1993) or the Northwest Forest Plan Final SEIS (USDA and USDI 1994a). These natural episodic disturbance events are an integral part of process-based management contained in the Aquatic Conservation Strategy. As stated in the FEMAT report (USDA et al. 1993) at page V-29 and the Northwest Forest Plan FSEIS (USDA and USDI 1994a) at page B-81:

“The heart of the approach is the recognition that fish and aquatic organisms evolved within a dynamic environment.”

The Northwest Forest Plan provided an adaptive management approach to environmental conditions and events. The Northwest Forest Plan recognized that ecosystems are not static but are ever changing in response to conditions and events. The Forest Service and BLM determined that large fires, flood, drought and El Niño events occurring since 1994 are not changed conditions that would invalidate the four components of the ACS (WA, watershed restoration, Key Watersheds, Riparian Reserves). The Northwest Forest Plan and Aquatic Conservation Strategy require consideration of natural disturbances in land management decisions.

AFFECTED SPECIES AND CRITICAL HABITAT

Bull Trout

The FWS BOs for the FS and BLM RMPs as amended by the NWFP and the FS and BLM RMPs as amended by the PACFISH and INFISH provided a general description of the status of bull trout in the NWFP (USDI 1998 and USDI 2000). The draft Bull Trout Recovery Plan provides information on the distribution and abundance of bull trout in all Distinct Population Segments in the conterminous United States, and offers the most recent status information for the species by recovery unit (USDI 2002). However, there is no new information regarding status of bull trout in the Coastal-Puget Sound DPS presented in the draft Bull Trout Recovery Plan. It remains as described in the 2000 NWFP bull trout BO (USDI 2000). Chapters 2, 5, 6, 7, 8, 20, 21, and 22 of the draft recovery plan describe the current distribution and abundance of the recovery units considered in this BA and are hereby incorporated by reference (USDI 2002). Since the initial listing of the DPSs, changes to the status of eight recovery units is summarized as follows:

Klamath Recovery Unit. Distribution and abundance information is found in Chapter 2, pages 10-16. Since bull trout were listed in 1997, the extent of bull trout habitat has expanded from 7 to 9 populations. A population has been established in Lost Creek, a stream within Crater Lake National Park in the Klamath Lake Core Area. A population was rediscovered in Coyote Creek within the Sycan River Core Area.

Willamette River Recovery Unit. Distribution and abundance information is found in Chapter 5, pages 9-21. Population counts are updated to 2001. A fourth local population may exist in the Middle Fork Willamette River above Hills Creek Dam, pending documentation of successful reproduction. There has been a bull trout fry introduction program at seven sites above Hills Creek dam.

Hood River Recovery Unit. Distribution and abundance information is found in Chapter 6, pages 8-13. One core area has been established in the Recovery Unit. It includes the Sandy River where three documented captures of bull trout have been reported since November 1999.

Deschutes River Recovery Unit. Distribution and abundance information is found in Chapter 7, pages 7-10. Current distribution is limited to the lower Deschutes Core Area which includes five local populations in Shitike Creek, Warm Springs River, and three Metolius River population complexes.

Odell Lake Recovery Unit. Distribution and abundance information is found in Chapter 8, pages 7-9. The Recovery Unit consists of Odell and Davis Lakes, streams draining into them and Odell Creek, which flows from Odell Lake to Davis Lake. Bull trout are occasionally observed in Odell Creek. One was caught by an angler in June 2000 at the Davis Lake inlet of Odell Creek.

Night snorkel juvenile bull trout counts in Trapper Creek increased from 26 in 1996 to 208 in 2001.

Lower Columbia River Recovery Unit. Distribution and abundance information is found in Chapter 20, pages 10-16. This Recovery Unit includes the Lewis River Core Area (LRCA) and the Klickitat River Core Area (KRCA). Local populations in the Lower Columbia River Recovery Unit are found in Cougar, Pine and Rush Creek (Lewis River) and in West Fork Klickitat River.

The LRCA has reproducing populations in Lake Merwin, Yale and Swift Creek Reservoirs. During 2001, catch reports of two bull trout individuals indicate a resident population may exist in upper Lewis River. However, they may have been misidentified. There have been only two bull trout sightings downstream from Merwin Dam. The estimated spawning population in Cougar Creek, the sole documented spawning tributary to Yale Reservoir, has ranged from 0-40 individuals from 1979 to 2001. The fall 2001 count was 9 adults. Tagging studies in Swift Creek Reservoir from 1994-2000 estimated the spawning population ranged from 101-437 fish. In 2001 the bull trout population in Swift Creek Reservoir was estimated at 542 adults.

Bull trout are known to occur in the KRCA in the West Fork Klickitat River and tributaries. A survey in 2001 did not find bull trout in the Klickitat River mainstem above the confluence with the West Fork.

Fluvial bull trout are occasionally captured in the Columbia River mainstem. Five were caught incidentally in the northern pikeminnow fishery below Bonneville Dam from 1994-1998 and there are historic records of bull trout caught in fish wheels during the salmon fishery.

Middle Columbia River Recovery Unit. Distribution and abundance information is found in Chapter 21, pages 5-13. The Yakima River Basin Core Area is the sole Core Area. Eight subpopulations were identified at the time of listing of the DPS in 1998. The biological terminology has been revised. The draft Bull Trout Recovery Plan (USDI 2002) now identifies 13 local populations in the Core Area. Bull trout redd counts at index streams for the time frame from 1994-2001 are presented in a table. No trends are identified from analysis of the table data.

Upper Columbia River Recovery Unit. Distribution and abundance information is found in Chapter 22, pages 11-26. The final rule published in 1998 described eight subpopulations. The draft Bull Trout Recovery Plan (USFWS 2002) now identifies three Core Areas (CA): The Wenatchee River; Entiat River; and, Methow River.

The Wenatchee River CA has six local populations and its stronghold is the Chiwawa River. Redd survey counts for four local populations are presented for the time period from 1989-2001. No trends were discussed.

The Entiat River CA has two local populations; the mainstem Entiat River and Mad River. The two CAs are thought to be isolated by a natural thermal barrier. There are very small numbers of bull trout remaining in the Entiat River. Spawning counts for the years 1998-2001 range from 0-6. Spawning counts for the Mad River index reach for the years 1989 to 2001 indicate that

counts have been higher in recent years. The 1998-2001 counts ranged from 30-45, while the 1989-1997 counts ranged from 10-23.

The Methow River CA has eight local populations. Spawning counts for the years 1998-2001 indicate that the greatest number of spawners is consistently found in the mainstem Twist River (38-67).

A radio-tracking study was conducted in the mainstem upper Columbia River in 2001 on 39 bull trout captured at three mainstem dams: Rock Island (7); Rocky Reach (22); and, Wells (10). In all cases, the released fish continued moving upstream.

Anadromous Fish

The status of all listed salmon and steelhead considered in this BA has been recently reviewed by NOAAF. Under the direction of NOAAF, a draft report of the updated status of listed ESUs of salmon and steelhead titled "Preliminary conclusions regarding the updated status of listed ESUs of West Coast salmon and steelhead" was prepared in March 2003 (draft USDC 2003). The draft report summarizes preliminary conclusions of the NOAAF Biological Review Team (BRT) regarding the updated status of 26 ESA-listed ESUs of salmon and steelhead from Washington, Oregon, Idaho and California. Of the candidate species considered in this BA, the Lower Columbia River/Southwest Washington coho salmon ESU is included in the status review.

Chinook salmon life history types are described in Section A.1 of the draft status update. Steelhead life histories and habitat preferences are described in Section B.1. Coho salmon life histories and habitat preferences are described in Section C.1. Sockeye salmon life histories and habitat preferences are described in Section D.1. Chum salmon life histories and habitat preferences are described in Section E.1. A brief summary follows for updated status by ESU for species considered in this BA. The draft status update does not include the Central Valley fall and late run Chinook salmon ESU, Puget Sound/Strait of Georgia coho salmon ESU or the Oregon Coast steelhead ESU, which all have candidate status.

Snake River fall Chinook salmon. Previous status reviews identified a steady and severe decline in abundance since the early 1970s, loss of primary spawning and rearing areas upstream from Hells Canyon Dam complex, increased non-local hatchery contribution to adult escapement over Lower Granite Dam, and relatively high harvest impacts (Section A.2.1). There has been an upward trend in returns over Lower Granite Dam since the mid 1990's. Returns classified as natural origin exceeded 2,600 fish in 2001, compared to a 1997-2001 geometric mean natural origin count of 871. Both the long and short-term trends in natural returns are positive. Harvest impacts on Snake River fall Chinook declined after listing and have remained relatively constant in recent years. There have been major reductions in fisheries impacting this stock. Mainstem conditions for subyearling Chinook migrants from the Snake River have generally improved since the early 1990s. The outside (outside the Snake River) hatchery component has decreased as a percentage of the run at Lower Granite Dam from the 1998/99 status reviews (five year average of 26.2%) to 2001 (8%). This reflects an increase in the Lyons Ferry component,

systematic removal of marked hatchery fish at the Lower Granite trap, and modifications to the Umatilla supplementation program to increase homing of fall Chinook release groups.

Snake River spring/summer Chinook salmon. A previous BRT conclusion was that the ESU escapement had dropped to a small fraction of historical levels. Causes were mainstem hydropower development including altered flow regimes, impacts on estuarine habitats, regional habitat degradation, and risks associated with use of outside hatchery stocks (Section A.2.2). Returns of spring Chinook measured at Lower Granite Dam showed a large increase over recent year abundances. However, 98.4% of the 2001 run was estimated to be of hatchery origin. The 1997-2001 geometric mean total return for the summer run component at Lower Granite was slightly more than 6,000, compared to the geometric mean of 3,076 for the years 1987-96. Long-term trend and lambda estimates were below 1 for all natural production data sets. Short-term trends and lambda estimates were generally positive with relatively large confidence intervals. Tucannon River, Poverty Flat and Sulfur Creek index areas had the lowest short-term lambda estimates in the series. Harvest impacts are now generally low. Increased escapement led to an increase in harvest beginning in 2000. Tributary habitat conditions vary widely among the various drainages of the Snake River. There is habitat degradation in many areas of the basin, reflecting impacts of forest, grazing, and mining practices. Spring and summer Chinook are produced at a number of artificial production facilities, with releases from outside basin stocks currently a small fraction of the total release in the basin.

Upper Columbia River spring-run Chinook salmon. Long-term trends for abundance of populations have been generally negative, but escapement increased substantially in 2000 and 2001 (Section A.2.4). These runs are subject to passage mortality associated with mainstem hydroelectric projects. Many populations have rebounded somewhat from critically low levels at the time of the last status review evaluation (Section A. 3, page 120). This ESU continues to have a large hatchery influence.

Puget Sound Chinook salmon. Describes previously identified threats to habitat from human development. They include forest practices, agriculture and urbanization. Harvest impacts have been high. Long-term trends in abundance and median population growth rates for naturally spawning populations both indicate that about one-half the populations are declining and one-half are increasing in abundance. Section A.2.4.4 discusses updated threats and focuses on harvest rates and hatchery fish implications. More populations have increased than decreased over the four years since the last assessment. (Section A.3, page 122).

Lower Columbia River Chinook salmon. Section A.2.5 provides new information on loss of historic habitat by barriers. The ESU is substantially modified from the historical population structure. Most "tule" fall Chinook populations are potentially at risk of extinction. Lewis River "brights," which are a late fall-run, has the highest likelihood among identified populations of being self-sustaining under current conditions. High hatchery production continues to pose risks to natural populations. Most populations have not seen pronounced increases in recent years as occurred in other ESUs (Section A.3, page 121).

Upper Willamette River Chinook salmon. Section A.2.6 provides new information since the last status update on spawner abundance through 2002 in the Clackamas River, 2001 in the

McKenzie River, and 2001 at Willamette Falls on the Willamette River. New information is also provided for redd surveys, the fraction of hatchery origin spawners in the McKenzie and North Santiam Rivers, the hatchery fraction of the Clackamas River, and on recent hatchery releases. The ESU is substantially modified from its historical population structure, with most populations extirpated. The only population considered potentially self-sustaining is the McKenzie. Although the number of adult spring Chinook crossing Willamette Falls has been in the same range for the last 50 years, there is concern that a large fraction is hatchery produced. There is also a concern that about one-third of the historically available habitat is currently inaccessible behind dams (Section A.3, page 121).

California Coastal Chinook salmon. Section A.2.7 summarizes risk factors and status. Primary causes for concern were low abundance, reduced distribution and generally negative trends in abundance, especially for spring-run populations. Previous status reviews considered the following to pose significant risks: degradation of freshwater habitats due to agricultural and forestry practices; water diversions, mining, urbanization, and severe recent flood events. Effects of hatcheries and transplants were of less concern than other factors in previous assessments of this ESU. New data presented included spawner surveys and adult counts in the Eel River and tributaries to the Eel River, Mad River and in Freshwater Creek (tributary to Humboldt Bay). No information exists to suggest new risk factors or substantial amelioration of risk factors noted in previous reviews. The current evaluation expressed concern for continued evidence of low population sizes relative to historic abundance (Section A.3, page 122). Concerns for genetic integrity are moderate to low because hatchery production is on a minor scale.

Sacramento River winter-run Chinook salmon. The single most obvious challenge to winter Chinook was construction of Shasta Dam which blocked access to the entire historic spawning habitat (Section A.2.8.1). There is a single population remaining and it is dependent upon cold water releases from Shasta Dam. Escapement fell from highs near 100,000 in the 1960s to below 200 fish in the 1980s. Other threats identified include inadequately screened diversions, predation at artificial structures and by nonnative species, overfishing, pollution from mines, adverse flow conditions, high summer water temperatures, unsustainable harvest rates, passage problems at various structures and vulnerability to drought. Status of winter Chinook has been improving. Harvest impacts have been reduced due to changes in ocean fisheries. The main concerns of the BRT relate to the fact that there is only one population remaining and it has been displaced from its original spawning habitat (Section A.3, page 122).

Central Valley spring-run Chinook salmon. Threats are described for three categories: loss of most historic spawning habitat; degradation of remaining habitat; and genetic threats from the Feather River Hatchery spring Chinook program (Section A.2.9.1). Most currently available habitat is susceptible to high summer water temperatures. Only three self-sustaining wild populations remain. There are many small hydropower and water diversion dams that have reduced or eliminated flows at critical migration periods. New information on abundance for the three self-sustaining populations indicate that increases in populations beginning in the 1990s has continued. This may be a result of significant habitat improvements, as well as reduced ocean fisheries and a favorable terrestrial climate. The BRT expressed continuing concern by the loss

of diversity caused by extirpation of populations from most of the Central Valley, including all the San Joaquin tributaries. (Section A.3, page 121).

Snake River Basin steelhead. There are ten populations within the ESU. The primary BRT conclusion identified in the 1998 status review was a sharp decline in natural stock returns in the mid-1980s. The high proportion of hatchery in the run was also identified as a concern. Annual estimates of steelhead returns to specific production areas within the Snake River are generally not available. Annual run estimates are limited to counts of the aggregate return over Lower Granite Dam, which remained at relatively low levels through the 1990s. The 2001 run size at Lower Granite Dam was substantially higher than the 1990s. Overall, long-term trends for four of the nine available series remained negative. Short-term trends improved relative to the period analyzed for the previous status review. The Idaho Department of Fish and Game concluded that Idaho steelhead failed to meet replacement for most generations since 1985, based upon parr density survey results through 1999 (this did not include information on the increased returns for 2001 and 2002). Hatchery programs for steelhead production continue. Tucannon River artificial production switched to a local brood stock beginning with the 1999/2000 cycle year.

Upper Columbia River steelhead. Harvest rates on upper river steelhead are reduced from historical levels. Hatchery returns predominate in the populations in the Wenatchee, Methow and Okanogan Rivers. Previous BRT conclusions identified a number of concerns including major hatchery supplementation programs, high harvest rates on smolts in trout fisheries, and degradation of habitats (especially from grazing, irrigation diversions and hydroelectric dams) (Section B.2.2). Hatchery production increased from the 1960s to the 1990s. The last two to three years has seen an encouraging increase in the number of naturally produced fish. However, this is still a fraction of interim recovery targets (Section B.3, page 100).

Middle Columbia River steelhead. Previous BRT conclusions identified serious declines in the John Day, Yakima River and Deschutes River basins (Section B.2.3.1). High summer and low winter water temperatures, water withdrawals, degradation of riparian vegetation and instream structure were identified as habitat concerns. With some exceptions, the recent 5 year average abundance for natural steelhead within this ESU was higher than in the last status review. Short-term trends in major production areas were positive for seven of 12 areas. However, all of the production area trends indicate relatively low escapement levels in the 1990s. Relative high numbers of hatchery origin steelhead returning from releases outside of the basin continue to enter the Deschutes River. The actual number that spawn in the Deschutes is unknown. The BRT had difficulty drawing conclusions about the ESU for two reasons. The status of different populations within the ESU varies greatly. Also, there is uncertainty about how to evaluate the contribution of resident fish (Section B.3, page 101).

Lower Columbia River steelhead. The draft status update provides new information on spawner updates through 2001 or 2002, dependent upon the stream. New information is also provided on the fraction of hatchery spawners and harvest estimates, estimates of historical abundance, recent hatchery releases, an assessment of resident rainbows, and an assessment of proportion of habitat currently inaccessible (Section B.2.4.2). A number of populations have a sizable fraction of hatchery origin natural spawners. The majority of populations have a long-term declining trend. All of the major risk factors identified by previous BRTs still remain. Most populations

are at relatively low abundance, but many have shown higher returns in the past two to three years. (Section B.3, page 102).

Upper Willamette River steelhead. New data is provided for redd counts and dam/weir counts through 2000, 2001, or 2002. There are also new estimates for the hatchery fraction and harvest rate through 2000 (Section B.2.5). The BRT could not identify a single population that is naturally self-sustaining. Estimation of natural productivity is confounded by the presence of hatchery origin spawners. There has been recent elimination of the hatchery winter-run program. The counts indicate an increase in abundance in 2001, likely at least in part as a result of improved marine conditions. The total abundance is small for an ESU. Recent increases are encouraging but it is uncertain if they can be sustained (Section B.3, page 102).

Northern California steelhead. There are two major barriers to fish passage: Matthews dam on the Mad River and Scott Dam on the Eel River. Poor forest practices and land use practices, combined with catastrophic flooding in 1964 were thought to have caused significant and persistent causes of decline in habitat quality that persisted to the time of ESA listing. Non-native Sacramento pikeminnow have been introduced in the Eel River and could be predators on juvenile steelhead (Section B.2.6). Analysis suggests that the Eel River population is declining in both the long and short-terms. Lack of data for this ESU was a cause for uncertainty in the status update (Section B.3, page 103).

Central California Coast steelhead. Two significant dam blockages occur in the Russian River and other smaller fish passage problems are widespread (Section B.2.7). Other habitat concerns include urbanization and poor land use practices, catastrophic flooding in 1964 resulting in habitat degradation, and dewatering due to diversions and irrigation. There was a downward trend for juvenile production in five independent populations for which a trend was estimated. Updated hatchery information is presented. There were no time-series data for this ESU, but a variety of evidence suggests that the Russian River run, the largest in the ESU has been reduced in size and continues to decrease. Concern was also expressed about populations in the southern range of the ESU in Santa Cruz County and the South Bay area (Section B.3, page 103).

California Central Valley steelhead. Existing populations are small and subject to habitat degradation (Section B.2.10). Much of the historic cool water habitat is now above impassable dams. Concerns include extirpation from most of the historic range, a decline in the single time series of abundance that is available, a declining proportion of wild fish in spawning runs, deleterious interactions with hatchery fish, various habitat problems, and a lack of ongoing population assessments. Hatchery production is apparently large compared to natural production, based upon trawl sampling. The trawl data suggests that the population continues to decline. A concern identified by the BRT was continued use of out-of-ESU steelhead by two hatcheries (Section B.3, page 105).

Oregon Coast Coho salmon. Ocean run sizes estimated for the ESU in 1996 were approximately one-third that of the 1950s and one-tenth those of the late 1800s. At that time, long term trend estimates of abundance were all negative. However, more recent escapement estimates indicate a positive trend for the Umpqua and Mid/South Coast Monitoring Areas, but negative in the North/Mid Coast. In 1996, the BRT was also concerned about habitat degradation and hatchery

production and genetic risks. Harvest impacts were high, ranging from 60% to 90% in the time period from the 1960s to the 1980s. Hatchery and harvest reforms have been enacted since the mid-1990s. The ESU had the highest number of adult spawners for any year in several decades in 2001. However, it was preceded by three years of low spawner escapements. The BRT was concerned that if the long-term decline in productivity reflects deteriorating conditions in freshwater habitat, this ESU could face serious risks of local extinctions in the next cycle of poor ocean conditions (Section C.3, page 75).

Southern Oregon/Northern California Coast Coho salmon. Data is sparse for historic abundance in the California portion of the ESU, but abundance is estimated to be considerably lower than historic levels, with some local extirpations. For example, the percentage of streams in Del Norte County estimated to still support coho salmon in the mid-1990s was 46%, and 55% in Humboldt County. Specific risk factors identified by the earlier BRT included low current abundance, severe declines from historic levels, local extinctions, long-term downward trends, degraded freshwater habitat, and widespread hatchery production using exotic stocks (Section C.2.2). The draft status update was limited by lack of data on escapement of natural spawners. The only reliable long-term time series is available for the Rogue River which indicates trends are upwards for mean spawner abundance both in the short (10 year) and long (22 year) trends. Less reliable indices for California trends suggest downward trends and no detectable trends. The BRT remains concerned about the large number of hatchery fish in the Rogue, Klamath and Trinity systems (Section C.3, page 76).

Central California Coast Coho salmon. Data is sparse for historic abundance in the ESU, but abundance is estimated to be considerably lower than historic levels, with some local extirpations. Risk factors identified by the previous BRT included low abundance compared to historic levels, widespread local extinctions, clear downward trends in abundance and extensive habitat degradation (Section C.2.3). The main stocks in the ESU have been heavily influenced by hatcheries, with many out-of-ESU transfers. In 2002 it was estimated that coho salmon remain in 42% of streams they historically used in the ESU. There is no time series spanning eight or more years for adult abundance free from hatchery influence in the ESU. Artificial propagation has been reduced since the ESU was listed in 1996 and harvest has been reduced. A number of populations in the southern portion of the range appear either extinct or nearly so. The BRT estimates this to be the case in the southern two-thirds of the ESU, including several major river basins (Section C.3, page 77).

Lower Columbia River/Southwest Washington Coho salmon. Please note that the draft status review update refers to this ESU as the Lower Columbia coho salmon ESU. Long-term trends in abundance are slightly positive and short-term trends slightly negative for the Clackamas River (Section C.2.4.2). The Sandy River population has similar trends to the Clackamas River. There was no information presented for trends in Washington rivers. Both Oregon and Washington populations are dominated by hatchery production. There is little natural production outside the Sandy and Clackamas Rivers in Oregon, and no populations in Washington with appreciable natural production. Thus 21 of 23 historically present populations are currently or nearly extirpated. There was no discussion presented about habitat concerns. The most serious overall concern of the BRT was the nearly total absence of naturally produced spawners throughout the ESU (Section C.3, page 77).

Hood Canal summer-run Chum salmon. Threats previously identified for this ESU included degradation of spawning habitat, low river flows, possible competition among hatchery and naturally-produced chum salmon juveniles, and high levels of incidental harvest in salmon fisheries (Section E.2.1.1). Other concerns included increasing urbanization of the Kitsap Peninsula, recent increases in pinniped populations in Hood Canal, and hatchery supplementation programs. Long-term trends in abundance and median population growth rates indicate that the majority of populations are declining. Those populations with the greatest long-term population growth rates are the Union and Quilcene. Harvest rates have declined in recent years from a median of 9.6% for the earliest five years of data to 5% for the most recent five year period. New threats identified by the BRT include negative interactions with hatchery fish of other species through predation, competition, behavior modification or disease transfer. Preliminary BRT conclusions in the draft status update are that seven of 16 historic populations have been extirpated and widespread loss of estuary and lower floodplain habitat remains a concern (Section E.3, page 29).

Columbia River Chum salmon. The previous BRT found dramatic declines in abundance and distribution from historic levels. The remaining populations exhibit low productivity (Section E.2.2). New information indicates that of 16 estimated historic populations, 13 have been extirpated and the number currently viable may be 0-3. Encouragingly, there has been a substantial increase in the two populations and the new (or newly discovered) "I-205" population. This ESU has shown low productivity for decades. Unofficial reports indicate that 2002 escapement numbers may be greatly increased in some locations (Section E.3, page 29).

Snake River sockeye salmon. This ESU was listed amid uncertainty as to whether or not the Redfish Lake sockeye were a distinct population from kokanee that are present in relatively large numbers in the lake. From 1991 to present investigations have determined that there is a component of the kokanee population in Redfish Lake that spawn at the same time and place as the sockeye and are termed "residual" sockeye salmon. Otolith evaluations have determined that many of the outmigrants from Redfish Lake had a resident female parent.

Annual adult returns to Redfish Lake Creek weir have ranged from 0 to 8 from 1988 to 1998, and from 7-257 from 1999 to 2002. The latter four years reflect progeny of the captive brood stock program, which has been in place for this ESU since 1991. Releases of progeny from the brood stock program have been made in Pettit Lake and Alturas Lake in attempts to establish separate populations.

Proposed Critical Habitat for Bull Trout DPSs

On November 29, 2002, the FWS proposed designation of critical habitat for the Klamath River and Columbia River distinct population segments of bull trout pursuant to the Endangered Species Act of 1973, as amended (Table 1). Critical habitat includes bull trout habitat across the species' range in Idaho, Montana, Oregon, and Washington. Critical habitat is proposed in 25 units that correspond to recovery units identified in the Draft Recovery Plan (USDI 2002). Proposed critical habitat for the Klamath River DPS is entirely within Unit 1. Proposed critical habitat for the Columbia River DPS is in Units 2 through 25. For the Klamath River DPS, the

proposed critical habitat designation includes approximately 296 miles (mi) of streams and 33,939 acres (ac) of lakes and marshes in Oregon. For the Columbia River DPS, the proposed critical habitat designation totals approximately 18,175 mi of streams and 498,782 ac of lakes and reservoirs.

The lateral extent of the proposed fluvial and adfluvial critical habitat is defined in the federal register notice. The lateral extent of critical habitat, for each proposed stream reach, is the width of the stream channel as defined by its bankfull elevation. Critical habitat extends from the bankfull elevation on one side of the stream channel to the bankfull elevation on the opposite side. Adjacent floodplains are not proposed as critical habitat. The lateral extent of proposed lakes and reservoirs is defined by the perimeter of the water body as mapped on standard 1:24,000 scale maps.

The FWS proposed critical habitat designation identified those physical and biological features of the habitat that are essential to the conservation of the species and that may require special management consideration or protection. These physical and biological features include, but are not limited to: space for individual and population growth, and for normal behavior; food, water, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distribution of a species. All areas proposed as critical habitat for bull trout are within the historic geographic range of the species and contain one or more of these physical or biological features essential to the conservation of the species. The FWS also included a list of known primary constituent elements with the critical habitat description. The primary constituent elements may include, but are not limited to, features such as spawning sites, feeding sites, and water quality or quantity.

The FWS determined the primary constituent elements for bull trout from studies of their habitat requirements, life-history characteristics, and population biology, as outlined above. These primary constituent elements are:

- 1) Permanent water having low levels of contaminants such that normal reproduction, growth and survival are not inhibited;
- 2) Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures at the upper end of this range. Specific temperatures within this range will vary depending on bull trout life history stage and form, geography, elevation, diurnal and seasonal variation, shade, such as that provided by riparian habitat, and local groundwater influence;
- 3) Complex stream channels with features such as woody debris, side channels, pools, and undercut banks to provide a variety of depths, velocities, and instream structures;
- 4) Substrates of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine substrate less than 0.63 cm (0.25) in diameter and minimal substrate embeddedness are characteristic of these conditions;
- 5) A natural hydrograph, including peak, high, low and base flows within historic ranges or, if regulated, a hydrograph that demonstrates the ability to support bull trout populations;

- 6) Springs, seeps, groundwater sources, and subsurface water connectivity to contribute to water quality and quantity;
- 7) Migratory corridors with minimal physical, biological, or chemical barriers between spawning, rearing, overwintering, and foraging habitats, including intermittent or seasonal barriers induced by high water temperatures or low flows;
- 8) An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish; and
- 9) Few or no predatory, interbreeding, or competitive nonnative species present.

Within the NWFP area, critical habitat is proposed on 9 FS or BLM administrative units in 8 recovery units of the Klamath River and Columbia River bull trout DPSs. The 9 FS or BLM administrative units are the CRGNSA, Deschutes, Gifford Pinchot, Mt. Hood, Okanogan, Wenatchee, Willamette, Winema NFs and Eugene District. The proposed fluvial and adfluvial critical habitat for the 8 recovery units is listed in Table 16. The 8 recovery units are the Klamath River, Willamette River, Hood River, Deschutes River, Odell Lake, Lower Columbia River, Middle Columbia River and Upper Columbia River. Of the 8 recovery units considered in this analysis, the largest area of adfluvial critical habitat is proposed for the Klamath and Deschutes recovery units, and the longest fluvial critical habitat is proposed for the Deschutes, Middle Columbia River and Upper Columbia River recovery units (Table 16).

The vast majority of the proposed critical habitat on FS and BLM lands is National Forest. The Eugene District is the only BLM administrative unit with proposed critical habitat, a minuscule 0.4 mi. of fluvial habitat in the Willamette River unit (Table 16). The Wenatchee and Deschutes administrative units have the greatest quantity of proposed critical habitat. Both of these administrative units have proposed critical habitat in two recovery units as well. These administrative units have the largest quantity of adfluvial habitat areas as well as some of the longest fluvial habitat. On the other hand, the CRGNSA has the least amount of proposed critical habitat.

Critical Habitat for Sacramento River Winter-run Chinook

Critical habitat for this species includes the river water, river bottom (including those areas and associated gravel used by winter-run Chinook salmon as spawning substrate), and adjacent riparian zone used by fry and juveniles for rearing. Specific water temperature criteria, minimum instream flow criteria, and water quality standards represent physical features of the winter run Chinook salmon's habitat that are essential for the species conservation. Biological features of the designated critical habitat that are considered vital for winter run Chinook include unimpeded adult upstream migration routes, spawning habitat, egg incubation and fry emergence areas, rearing areas for juveniles, and unimpeded downstream migration routes for juveniles.

Table 16. Proposed fluvial and adfluvial critical habitat for recovery units of the Klamath River and Columbia River DPS within the NWFP area is displayed by recovery unit and FS and BLM administrative unit. The proposed critical habitat for the entire recovery unit is also displayed.

Unit #	Recovery Unit	EUG	CRGNSA	DES	GIP	MTH	OKA	WEN	WIL	WIN	NWFP BLM & FS Total (%)	Proposed Critical Habitat
1	Klamath River Basin											
	Stream (Miles)	0	0	0	0	0	0	0	0	22.6	22.6 (8)	295
	Lake (Acres)	0	0	0	0	0	0	0	0	0	0	33,952
4	Willamette River Basin											
	Stream (Miles)	0.4	0	0	0	0	0	0	90	0	90.4 (43)	209
	Lake (Acres)	0	0	0	0	0	0	0	4,058	0	4,058 (46)	8,904
5	Hood River Basin											
	Stream (Miles)	0	0	0	0	47.6	0	0	0	0	47.6 (46)	110.3
	Lake (Acres)	0	0	0	0	91	0	0	0	0	91 (100)	91
6	Deschutes River											
	Stream (Miles)	0	0	113.4	0	0	0	0	0	0	113.4 (23)	498
	Lake (Acres)	0	0	12,019	0	0	0	0	0	0	12,019 (52)	22,966
7	Odell Lake											
	Stream (Miles)	0	0	11.3	0	0	0	0	0	0	11.3 (100)	11.3
	Lake (Acres)	0	0	6,611	0	0	0	0	0	0	6,611 (100)	6,611
19	Lower Columbia River											
	Stream (Miles)	0	0.1	0	32.8	0	0	0	0	0	32.9 (16)	210
	Lake (Acres)	0	0	0	4,572	0	0	0	0	0	4,572 (37)	12,488
20	Middle Columbia River											
	Stream (Miles)	0	0	0	0	0	0	220.4	0	0	220.4 (42)	529
	Lake (Acres)	0	0	0	0	0	0	14,986	0	0	14,986 (100)	14,986
21	Upper Columbia River											
	Stream (Miles)	0	0	0	0	0	155.6	157.3	0	0	312.9 (53)	565
	Lake (Acres)	0	0	0	0	0	56	2,438	0	0	2,494 (100)	2,497
	Stream Totals	0.4	0.1	124.7	32.8	47.6	155.6	377.7	90	22.6	851.5 (35)	2427.6
	Lake Totals	0	0	18,630	4,572	91	56	17,424	4,058	0	44,831 (44)	102,495

Physical and biological features that are essential for the conservation of winter-run Chinook salmon, based on the best available information, include:

1. Access from the Pacific Ocean to appropriate spawning areas in the upper Sacramento River;
2. The availability of clean gravel for spawning substrate;
3. Adequate river flows for successful spawning, incubation of eggs, fry development and emergence, and downstream transport of juveniles;
4. Water temperatures between 42.5 and 57.5 degrees F (5.8 and 14.1 C) for successful spawning, egg incubation, and fry development,
5. Habitat areas and adequate prey that are not contaminated,
6. Riparian habitat that provides for successful juvenile development and survival, and
7. Access downstream so that juveniles can migrate from the spawning grounds to San Francisco Bay and the Pacific Ocean.

Designated critical habitat for this species includes 302 miles of the Sacramento River from Keswick Dam downstream to the Sacramento-San Joaquin Delta and most of the San Francisco and San Pablo Bay area North of the Bay Bridge. In the Sacramento River, critical habitat includes the river water, river bottom and the adjacent riparian zone. NOAAF limited "adjacent riparian zones" in this case to mean only those areas above a streambank that provide cover and shade to the near shore aquatic areas.

The Mendocino NF Red Bluff Recreation Area contains about 2.5 miles of shoreline on the Sacramento River which is approximately .004 percent of the total shoreline designated as critical habitat. SRWC are found in this part of the river seasonally as adults, fry and juveniles. Adult fish migrate to the upper Sacramento River from December through June and juveniles are generally moving downstream between August and October. Most spawning occurs in the Sacramento River upstream of Red Bluff.

Critical Habitat for Snake River Salmon ESUs

On December 28, 1993, the NOAAF designated critical habitat for the Snake River sockeye salmon, Snake River chinook salmon, and Snake River fall chinook salmon pursuant to the ESA (Table 1). The designated habitat for these 3 Snake River salmon ESUs consists of river reaches of the Columbia, Snake, and Salmon Rivers as well as some lakes and most tributaries of the Snake and Salmon rivers presently or historically accessible to chinook salmon (except reaches above impassable natural falls and select Dams).

The critical habitat designation identified those physical and biological features of the habitat that are essential to the conservation of the species and that may require special management consideration or protection. Essential Snake River salmon habitat consists of four components: (1) Spawning and juvenile rearing areas; (2) juvenile migration corridors; (3) areas for growth and development to adulthood; and (4) adult migration

corridors. The areas important to these 4 salmon habitat components were identified as well as their essential features.

Critical habitat for all listed Snake River salmon includes the bottom and water of the waterways and the adjacent riparian zone. The riparian zone includes those areas within 300 feet of the normal line of high water of a stream channel or from the shoreline of a standing body of water. Essential features of these areas include adequate: (1) Substrate (especially spawning gravel); (2) water quality; (3) water-quantity; (4) water temperature; (5) water velocity; (6) cover/shelter; (7) food; (8) riparian vegetation; (9) space; and (10) migration conditions. The essential features of adult and juvenile migration corridors are the same excluding adequate food for adults.

The CRGNSA contains waterways, shoreline or riparian areas near shoreline of the Columbia River. The Columbia River is designated critical habitat essential to juvenile and adult migration of the listed Snake River salmon, but does not provide essential habitat for spawning or rearing. On the Washington State side of the River, the CRGNSA has approximately 14.3 miles shoreline or 520.5 acres of riparian areas near shoreline of critical habitat. The Oregon State side of the River, the CRGNSA has approximately 8.25 miles shoreline or 299.7 acres of riparian areas near shoreline of critical habitat. The Snake River salmon adult and juvenile fish migrate through this segment of the Columbia River during the Spring and Summer.

Critical Habitat for Coho Salmon ESUs

On May 5, 1999, the NOAAF designated critical habitat for the Southern Oregon/Northern California Coast and Central California Coast coho salmon ESUs pursuant to the ESA (Table 1). The critical habitat consists of accessible reaches of all rivers (including estuarine areas and tributaries) within these two coho salmon ESUs. The geographic extent is further described in the Federal Register notice (Table 1) and is hereby incorporated by reference (64 FR 24049 5/5/99). The areas represent the current freshwater and estuarine range of the listed species. For both ESUs, critical habitat includes waterways substrate, and adjacent riparian zones below longstanding, naturally impassable barriers. Inaccessible areas above several dams in the range of these ESUs, that currently block access to habitats historically occupied by coho, were not designated as critical habitat.

In designating critical habitat, NOAAF considered the following requirements of the species:

(1) Space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, or rearing offspring; and generally, (5) habitats that are protected from disturbance or are representative of historical geographic and ecological distributions of this species. In addition to these factors, NOAAF identified the physical and biological features (primary constituent elements) of the habitat that are essential to the conservation of the species and that may require special management consideration or protection. The essential coho salmon habitat may consist

of but is not limited to the following five features: (1) Spawning sites; (2) food resources; (3) water quality; (4) water quantity; and (5) riparian vegetation.

Eleven administrative units contain waterways, substrate or riparian areas designated as critical habitat for the two coho salmon ESUs (Table 2). The Ukiah District is the only unit with designated critical habitat for the Central California Coast coho salmon ESU. Ten administrative units have critical habitat for the Southern Oregon/Northern California Coast coho salmon ESU. Those FS and BLM administrative units are: Klamath, Mendocino, Rogue River, Six Rivers, Siskiyou, Shasta-Trinity, Arcata, Coos Bay, King Range NCA, and Medford.

DESCRIPTION OF THE PROPOSED ACTION

This section describes the proposed action that consists of the continued implementation of the 30 individual RMPs as amended by the Preferred Alternative (Alternative A) of the ACS FSEIS (USDA and USDI in press) hereafter named the proposed ACS amendment. Section 5.1 generally describes the RMPs and refers the reader to previous assessments that addressed the individual RMPs. The ACS of the NWFP is described as well. Section 5.2 describes the Preferred Alternative (Alternative A) of the Final Supplemental Environmental Impact Statement for *Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Northern Spotted Owl* (USDA and USDI in press). Section 5.3 describes three additional areas within the ranges of species considered in this BA.

RMPs

The RMPs generically authorize various categories of federal actions which respond to the needs for forest habitat, goods and services. While all of the FS and BLM administrative units implement many of the same land-use practices, the levels of activities and outputs will vary depending on local conditions. Even though RMPs set important parameters for the authorization of specific projects, with some exceptions, RMPs do not provide the final authorization for project implementation. Final authorization of projects depends on the analysis of site-specific effects and consistency with appropriate management direction (RMPs, ROD, regulations, etc) in NEPA analysis, and ESA consultation. Effects of individual projects to ESA listed species and designated critical habitat are evaluated in ESA Section 7 consultation. Appendix A presents a description of analytical processes involved in project planning by the FS and BLM. A complete description and analysis of the individual RMPs and management direction are described in previous BAs prepared by the action agencies (USDA 1995b, 1995c, 1995d, 1995e, 2000; USDI 1997b, 2000c; USDA and USDI 1997a, 1997b, 1998, 1999), and are hereby incorporated by reference. The subsequent BOs issued by the consulting agencies are listed in the consultation history section 3.1 (Table 3), and are

incorporated herein by reference (USDC 1996a, USDC 1996b, 1997b, 1997c, 1997d, 1998a, 1998c, 1998d, 1999, 2000b, 2000c, 2001; USDI 1997b, 1998, 2000a, 2000b, 2000c) . Management actions which are typically conducted on FS and BLM lands include forest management, recreation, grazing, mining, watershed restoration, fish and wildlife habitat management, fire/fuels management, land exchanges and acquisitions, and a variety of special uses.

Forest management can be divided into two broad categories of activities: timber harvest and associated actions, and silvicultural treatments used to develop desirable stand characteristics. Timber harvest and associated actions can include: road construction, landing construction, renovation and use, including quarry operation; maintenance of existing roads; yarding and skidding logs; regeneration or thinning treatments; and salvage of dead or dying trees. Road maintenance actions include surface maintenance (blading), surface replacement, drainage maintenance and repair, vegetation management (brushing, limbing, seeding and mulching along roadways), slide repair, sign maintenance and repair, and maintenance, replacement and repair of major structures (bridges and major culverts). Silvicultural treatments include planting; plantation maintenance and release (density management, pre-commercial thinning and control of competing vegetation); animal damage control; and fertilization.

Recreational actions provide for a wide range of developed and dispersed recreational opportunities. Developed recreation actions include campground maintenance, and recreation site and trail construction/maintenance. Dispersed activities include general public use of federal lands (hunting, fishing, camping, hiking, etc), environmental education, and management of off-highway vehicles.

Range management activities on federal lands include livestock grazing, and rangeland improvements (fencing, water development, livestock handling facilities, and vegetation management).

Mining activities can be combined into two broad categories based on the method of extraction. Surface mining includes dredging and pit mining while underground mining utilizes tunnels or shafts to extract minerals. Activities associated with mining include roads and supporting structures and facilities.

Watershed restoration actions on federal lands are an integral part of management to aid in the recovery of fish habitat, riparian habitat, and water quality. Road decommissioning, culvert upgrades, riparian and stream habitat improvements, fish passage improvements, and riparian tree planting treatments are typical restoration actions.

Fish and wildlife management actions on federal lands may include stream and riparian habitat surveys; surveys for fish (smolt traps, snorkeling, spawning ground counts, electro-fishing), amphibians, and survey and manage species identified in the NWFP ROD, and wildlife habitat improvements (tree topping and falling).

Fire and fuels management actions include the suppression of wildfire and prescribed fire used to meet resource management objectives. Prescribed burning is used for fuels management for wildfire hazard reduction (under-burning), restoration of desired vegetation conditions, management of habitat and silvicultural treatments, i.e. site preparation (broadcast burning or pile burning). Pump chances, or water withdrawal sites, are created as water sources for fire suppression. Usually located next to roads, these sites are typically small, excavated ponds or short spurs for vehicle access to streams or lakes.

Land exchanges and acquisitions are made to benefit a variety of uses and values. Land tenure adjustments are made to improve public access, acquire important habitats or resources and improve the efficiency of managing federal lands.

Federal lands are a source of forest products for domestic and commercial uses. These products include firewood, mushrooms, ferns, boughs, mosses and similar products. FS and BLM administrative units issue permits for the collection of these products.

FS and BLM issue a variety of permits for the use of federal lands. Permits maybe issued for utility and powerline corridors, communication sites, domestic and municipal water lines and diversions, and hydroelectric facilities. Road use permits are issued to allow for the transportation of commercial commodities on FS and BLM managed roads. Road right-of-ways are issued to private individuals and companies for the construction and use of access roads across federal lands.

Amended RMP Direction per the NWFP ROD

The NWFP ROD (USDA and USDI 1994b) formally amended the existing USFS and BLM RMPs by the addition of new land allocations (ROD, page 6-7), and S&Gs (ROD, Attachment A, as well as in its entirety). Four NFs within the NWFP area were without approved RMPs when the ROD was signed. Therefore, unit plans and resource management plans of the Klamath, Mendocino, Shasta-Trinity and Six Rivers NF were initially amended by the ROD and later incorporated into their approved RMPs. These amending land allocations and S&Gs generally override those in existing plans, except for any provisions of the existing plans more stringent in their protection (see ROD, pages 11-12). A more complete description of all of the RMPs and their more stringent protections are included in the previous NOAAF and FWS BOs and the 1999 addendum to the 1997 BA (USDA 1999).

Since the ROD was signed, some BLM and FS administrative have updated individual RMPs incorporating the ROD land allocations, S&Gs, and other protective language and provisions. Table 17 lists the 30 FS and BLM administrative units in the NWFP area, the approval year of the RMPs and method by which the Aquatic Conservation Strategy of the NWFP was adopted by the administrative units. The CRGNSA plan is different from the other RMPs in that it is not amended by and doesn't incorporate the NWFP.

The CRGNSA management plan applies to all ownerships within the scenic area. The National Forest lands within the Columbia River Gorge National Scenic Area (CRGNSA) are governed by the RMPs of the Gifford Pinchot and Mt. Hood NFs in Washington and Oregon, respectively, which are amended by the Northwest Forest Plan. More stringent protection in the CRGNSA management plan takes precedence over the RMP direction. Because the Forest Plans are amended by NWFP and the CRGNSA incorporates the direction of the most protective plan, the CRGNSA Plan has not incorporated the NWFP. For a complete description and analysis of the CRGNSA, see the March 23, 1999, addendum to the 1997 BA, which describes protective measures on federal and private land in the proposed action and cumulative effects sections, respectively.

The National Forest System (NFS) lands in the National Scenic Area are governed by the Gifford Pinchot or Mt. Hood RMPs. An amendment to the RMP of the Gifford Pinchot and Mt Hood National Forests does apply to the NFS lands in the Scenic Area; however, it does not amend the National Scenic Area Plan.

Table 17. RMP approval date and method by which the NWFP ACS was adopted by BLM and FS administrative units within the NWFP area.

<i>Administrative Unit</i>	<i>RMP Date</i>	<i>NWFP ACS</i>	
		<i>Amended</i>	<i>Incorporated</i>
Columbia River Gorge NSA	1992	See GIP and MTH	
Deschutes	1990	X	
Gifford Pinchot	1990	X	
Klamath	1995		X
Lassen	1993	X	
Mendocino	1995		X
Modoc	1991	X	
Mount Baker Snoqualmie	1990	X	
Mount Hood	1990	X	
Okanogan	1989	X	
Olympic	1990	X	
Rogue River	1990	X	
Six Rivers	1995		X
Siskiyou	1989	X	
Shasta-Trinity	1995		X
Siuslaw	1990	X	
Umpqua	1990	X	
Wenatchee	1990	X	
Willamette	1990	X	
Winema	1990	X	
Arcata	1992	X	
Coos Bay	1995		X
Eugene	1995		X
King Range NCA	1974	X	
Klamath Falls	1995		X
Medford	1995		X
Redding	1993	X	
Roseburg	1995		X
Salem	1995		X
Ukiah	1984	X	

Aquatic Conservation Strategy - Components and Objectives

The Aquatic Conservation Strategy (ACS) was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The ROD states that “[t]he strategy is designed to protect salmon and steelhead habitat on Federal lands managed by the USFS and BLM within the range of Pacific Ocean anadromy.” However, the ROD does not completely cover that range (the southern and eastern ranges of steelhead, for example, are not covered by the NWFP ROD).

Forest Service and BLM-administered lands within the range of the Northern Spotted Owl are being managed to achieve the following nine ACS objectives:

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

In addition to the above ACS objectives, the NWFP ROD (USDA and USDI 1994b) contains a summary of the ACS for each of the primary ACS components: Riparian Reserves (ROD, page B-17); Key Watersheds (ROD, page B-19); WA (ROD, page B-30); and Watershed Restoration (ROD, page B-33). These summaries were included in the ROD to explain the expected contribution of each individual component to the overall ACS, and are hereby incorporated by reference.

Components of the Aquatic Conservation Strategy

All four of the ACS components are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. LSRs are also an important component of the ACS. The S&Gs under which LSRs are managed provide increased protection for all stream types. Because these reserves possess some late-successional characteristics, they can offer core areas of high quality stream habitat that will act as refugia and centers from which degraded areas can be recolonized as they recover. Streams in these reserves may be particularly important for endemic or locally distributed fish species and stocks.

1. Riparian Reserves: Riparian Reserves are portions of watersheds where riparian-dependent resources receive primary emphasis and where special S&Gs apply (USDA and USDI 1994b at B-12). S&Gs prohibit and regulate activities in Riparian Reserves that may retard or prevent attainment of the ACS objectives. Riparian Reserves include those portions of a watershed directly coupled to streams and rivers, that is, the portions of a watershed required for maintaining hydrologic, geomorphic, and ecological processes that directly affect standing and flowing water bodies such as lakes and ponds, wetlands, streams, stream processes, and fish habitats. Riparian Reserves occur at the margins of standing and flowing water, intermittent stream channels and ephemeral ponds, and wetlands. Riparian Reserves generally parallel the stream network but also include other areas necessary for maintaining hydrologic, geomorphic, and ecological processes.

Under the ACS, Riparian Reserves are used to protect, maintain and restore riparian structure and function of intermittent streams, confer benefits to riparian-dependent and associated species other than fish, enhance habitat conservation for organisms that are

dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors for many terrestrial animals and plants, and provide for greater connectivity within and between watersheds.

The Riparian Reserve widths are established based on ecological and geomorphic factors necessary to meet ACS objectives for different types of water bodies. These widths are designed to provide a high level of fish habitat and riparian protection: "Although Riparian Reserve boundaries may be adjusted on permanently-flowing streams, the prescribed widths are considered to approximate those necessary for attaining Aquatic Conservation Strategy objectives." (USDA and USDI 1994b at B-13).

The Riparian Reserves in combination with other withdrawn and reserve areas, and standards and guidelines will protect the overall ecosystem including the aquatic ecosystem: "The total system of withdrawn and reserved areas, along with the specified standards and guidelines, would meet the need to protect the overall ecosystem while providing for other management opportunities." (USDA and USDI 1994a at F-62); and reiterated elsewhere, "The total system of Key Watersheds, along with Riparian Reserves and the specified standards and guidelines, will meet the need to protect the overall aquatic ecosystem while providing for other management opportunities." (USDA and USDI 1994a at F-64).

WA will identify critical hill slope, riparian, and channel processes that must be evaluated in order to delineate Riparian Reserves and assure protection of riparian and aquatic functions. The prescribed Riparian Reserve widths could be modified in the future if a WA is completed, a site-specific analysis is conducted and described, and the rationale for Riparian Reserve boundaries is presented through the appropriate NEPA decision-making process.

The prescribed widths of Riparian Reserves apply to all watersheds. Riparian Reserves, as described in detail in the ACS on pages B12-B17 of the ROD, are specified for five categories of streams or water bodies as follows:

Fish-bearing streams - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest

Permanently flowing nonfish-bearing streams - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest.

Constructed ponds and reservoirs, and wetlands greater than 1 acre - Riparian Reserves consist of the body of water or wetland and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.

Lakes and natural ponds - Riparian Reserves consist of the body of water and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest.

Seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas - This category applies to features with high variability in size and site-specific characteristics. At a minimum, the Riparian Reserves must include:

The extent of unstable and potentially unstable areas (including earth flows);

The stream channel and extending to the top of the inner gorge;

The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation; and

Extension from the edges of the stream channel to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest.

Note: A site-potential tree height is the average maximum height of the tallest dominant trees (200 years or older) for a given site class.

Note: Intermittent streams are defined as any nonpermanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria.

2. Key Watersheds: Refugia are a cornerstone of most species conservation strategies. They are designated areas that either provide, or are expected to provide, high quality habitat. A system of Key Watersheds that serve as refugia is crucial for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species. These refugia include areas of high quality habitat as well as areas of degraded habitat. Key Watersheds with high quality conditions will serve as anchors for the potential recovery of depressed stocks. Those of lower quality habitat have a high potential for restoration and will become future sources of high quality habitat with the implementation of a comprehensive restoration program (see Watershed Restoration).

The ACS includes two designations for Key Watersheds. Tier 1 Key Watersheds (Aquatic Conservation Emphasis) contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species. They also have a high potential of being restored as part of a watershed restoration program. Tier 1 Key Watersheds consist primarily of watersheds identified previously by the Scientific Panel on Late-Successional Forest Ecosystems (Johnson et al. 1991), and in the Scientific Analysis Team Report (Thomas et al. 1993). The network of 143 Tier 1 Key Watersheds ensures that refugia are widely distributed across the landscape. While 21 Tier 2 (other) Key Watersheds may not contain at-risk fish stocks, they are important sources of high quality water (USDA and USDI 1994b, pages B-18-19).

Long-term management within Key Watersheds requires WA prior to further resource management activity. In the short term, until WA can be completed, minor activities such as those that would be categorically excluded under NEPA regulations (except timber harvest) may proceed if they are consistent with ACS objectives and apply Riparian Reserves and S&Gs. Timber harvest, including salvage, can not occur in Key Watersheds without a WA. Key Watersheds that currently contain poor quality habitat are believed to have the best opportunity for successful restoration and will receive priority in any watershed restoration program (USDA and USDI 1994B, pages B-18-19).

Roadless areas are an important component of Key Watersheds, aiding listed fish survival and recovery. Inventoried roadless areas are those that were originally designated under RARE II, and were expanded in scope with the Roadless Area Conservation Rule (USDA 2001). To protect the remaining high quality habitats within Key Watersheds, the S&Gs for Key Watersheds instructs that no new roads will be built in remaining unroaded portions of roadless areas (USDA and USDI 1994B, page C-7). In addition, WA is required in all Key Watersheds and all roadless areas prior to resource management (USDA and USDI 1994B, page C-3). In addition, existing system and nonsystem road mileage is targeted for reduction for areas of Key Watersheds outside roadless areas. At a minimum there will be no net increase in roads in Key Watersheds. S&Gs specific to Key Watersheds are summarized on page C-7 of the ROD.

3. Watershed Analysis: The ROD states that WA focuses on implementing the ACS. WA is one of the principal analyses that will be used in making decisions on implementation of the ACS. It is required in Key Watersheds, for roadless areas in non-Key Watersheds, and Riparian Reserves prior to project decisions. Watershed analyses must be completed before initiating actions within a Key Watershed except minor activities such as those that would be categorically excluded under NEPA regulations (except timber harvest) may proceed if they are consistent with the RMP including S&Gs associated with relevant land allocations.

WA has a critical role in providing for aquatic and riparian habitat protection. In planning for ecosystem management and establishing Riparian Reserves to protect and restore riparian and aquatic habitat, overall watershed condition and the array of processes operating within the watershed need to be considered. Effective protection strategies for

riparian and aquatic habitat on Federal lands must accommodate the wide variability in landscape conditions present across the Pacific Northwest. WA plays a key role in the ACS, ensuring that aquatic system protection is fitted to specific landscapes (USDA and USDI 1994B, page B-20).

WA focuses on collecting and compiling information within the watershed that is essential for making sound management decisions. The results of watershed analyses may include a description of the resource needs, capabilities, opportunities, the range of natural variability, spatially explicit information that will facilitate environmental and cumulative effects analyses for NEPA, and the processes and functions operating within the watershed. WA will identify potentially disjunct approaches and conflicting objectives within watersheds. The information from WA is used to develop priorities for funding, and implementing actions and projects, and is used in developing monitoring strategies and objectives. The participation of adjacent landowners, private citizens, interest groups, industry, various government agencies, and others in watershed analyses is promoted.

WA consists of technically rigorous and defensible procedures designed to identify processes that are active within a watershed, how those processes are distributed in time and space, the current upland and riparian conditions of the watershed, and how all of these factors influence riparian habitat and other beneficial uses. The analysis is conducted by an interdisciplinary team consisting of geomorphologists, hydrologists, soil scientists, biologists and other specialists as needed. Information used in this analysis includes: maps of topography, stream networks, soils, vegetation, and geology; sequential aerial photographs; field inventories and surveys including landslide, channel, aquatic habitat, and riparian condition inventories; census data on species presence and abundance; water quality data; disturbance and land use history; and other historical data (e.g., streamflow records, old channel surveys).

WA is organized as a set of modules that examine biotic and abiotic processes influencing aquatic habitat and species abundance (e.g., landslides, surface erosion, peak and low stream flows, stream temperatures, road network effects, coarse woody debris dynamics, channel processes, fire, limiting factor analysis for key species). Results from these modules are integrated into a description of current upland, riparian, and channel conditions; maps of location, frequency, and magnitude of key processes; and descriptions of location and abundance of key species.

WA provides the contextual basis at the site level for decision makers to set appropriate boundaries of Riparian Reserves, plan land use activities compatible with disturbance patterns, design road transportation networks that pose minimal risk, identify what and where restoration activities will be most effective, and establish specific parameters and activities to be monitored. More detailed site-level analysis is conducted to provide the information and designs needed for specific projects (e.g., road siting or timber sale layout) so that riparian and aquatic habitats are protected.

WA provides the ecological and geomorphic basis for changing the size and location of Riparian Reserves necessary to meet ACS objectives. Ultimate design of Riparian Reserves is likely to be a hybrid of decisions based on consideration of sites of special ecological value, slope stability, wildlife dispersal corridors, endemic species considerations, and natural disturbance processes.

4. Watershed Restoration: Watershed restoration is an integral part of a program to aid recovery of fish habitat, riparian habitat, and water quality. Restoration will be based on WA and planning. WA is essential to identify areas of greatest benefit-to-cost relationships for restoration opportunities and greatest likelihood of success. WA can also be used as a medium to develop cooperative projects involving various landowners. In many watersheds the most critical restoration needs occur on private lands downstream from federally managed lands. Decisions to apply a given treatment depend on the value and sensitivity of downstream uses, transportation needs, social expectations, risk assessment of probable outcomes for success at correcting problems, costs, and other factors. WA, including the use of sediment budgets, provides a framework for considering benefit-to-cost relations in a watershed context. Thus, the magnitude of restoration needs within the planning area will be based on WA.

With reference to roads, restoration may range from obliteration or full decommissioning (closing and stabilizing a road to eliminate potential for storm damage and the need for maintenance) to simple road upgrading, which leaves the road open (See B-31 of the ROD for a description of upgrading). The decision to apply a given treatment depends on the value and sensitivity of downstream uses, transportation needs, social expectations, assessment of probable outcomes for success at correcting problems, costs, and other factors. The magnitude of regional restoration needs will be based on WA.

Vegetative and silviculture programs are implemented to restore large conifers in Riparian Reserves, stabilize unstable areas, and thin densely-stocked stands. These practices can be implemented along with silvicultural treatments in uplands areas, although the practices will differ in objective and, consequently, design.

In-stream restoration, based on the interpretation of physical and biological processes and deficiencies during WA, can be an important component of an overall program for restoring fish and riparian habitat. In-stream restoration measures are inherently short term and, to be successful, must be accompanied by riparian and upslope restoration to achieve long-term watershed restoration. In-stream restoration, including in-channel structures, are not to be used to mitigate for management actions that degrade existing habitat, as a substitute for habitat protection, or to justify risky land management activities and practices. Priority must be given to protecting existing high quality habitat (USDA and USDI 1994B, pages B-31-32).

Other Plan Components

Other plan components that could have the potential for beneficial or adverse effects to ESA-listed fish species are Fire Management Plans and Access Travel Management Plans. Fire Management Plans are particularly important in watersheds where there is a high risk of high intensity, catastrophic fire. Many activity-specific S&Gs in the ROD address the need to reduce fuel loads and avoid risks of catastrophic fire. Typically these requirements are contained in sections of the S&Gs titled *Fire and Fuels Management* or *Fire Suppression and Prevention*.

Access Travel Management Plans are important in reducing any redundancy in the existing road network within Key and non-Key Watersheds containing ESA-listed fish species. WA information should aid in completing Access Travel Management Plans.

Monitoring and Adaptive Management Provisions

For a complete understanding of all the ROD's monitoring requirements, consult USDA and USDI (1994b). However, specific types of aquatic monitoring are expected under the implementation of the ACS (USDA and USDI 1994B, pages B-32, 33).

A variety of monitoring, specific to achieving the stated objectives of the ACS, is discussed in the ROD as an important component of management actions. General objectives of monitoring will be to: (1) determine whether the ROD and its corresponding S&Gs are being consistently followed throughout the NWFP area; (2) determine the effectiveness of management practices at multiple scales, ranging from individual sites to watersheds; and (3) validate whether ecosystem functions and processes have been maintained as predicted. In addition, monitoring will provide feedback to fuel the adaptive management process. Monitoring at the 20 to 200 square mile watershed level will link monitoring for ecosystem management objectives for multiple scales of province, river basin, smaller watershed and site-specific levels.

The ROD states that riparian area monitoring must be dispersed among the various landscapes rather than concentrated at a few sites and then extrapolated to the entire forest. Logistical and financial constraints require a stratified monitoring program that includes: post-project site review, reference to subdrainages, basin monitoring, a water quality network, and landscape integration of monitoring data.

Long-term systematic monitoring in selected watersheds will be necessary to provide reference points for effectiveness and validation monitoring (USDA and USDI 1994B, page B-33). Reference watersheds, subbasins, and individual sites have been selected as part of the overall adaptive management process described as part of these S&Gs. Study plans are cooperatively developed based on province, river basin, and/or watershed level analyses. Long-term data sets from reference watersheds will provide an essential basis for adaptive management and a gauge by which to assess trends in in-stream condition.

Monitoring is conducted and results will be documented, analyzed and reported by the agency or agencies responsible for land management in any particular watershed. Reports are reviewed by local interdisciplinary teams. In addition, water resource

regulatory agencies may review results to determine compliance with appropriate standards, and province and river basin-level strategies.

Summary of Land Allocations and Standards & Guidelines

For a summary of Land Allocations and S&Gs, refer to the ROD, page 6 and 7, (USDA and USDI 1994b) and the analysis of effects of ROD Land Allocations and S&Gs can be found in the previously prepared BOs and BAs.

Proposed amendment to the RMPs

The Secretaries of Agriculture and the Interior are proposing to amend the ACS portions of the RMPs except for the CRGNSA within the Northwest Forest Plan area. Projects needed to achieve Northwest Forest Plan goals have been delayed or stopped due to misapplication of certain passages in the ACS. Specific language has been interpreted to mean that every project must achieve all ACS objectives at all spatial and temporal scales. This interpretation suggests land managers must demonstrate that a project will maintain existing conditions (or lead to improved conditions) at every spatial and temporal scale. Any project that may result in site-level disturbance to aquatic or riparian habitat, no matter how localized or short-term, could be precluded under this interpretation.

The CRGNSA Plan would be indirectly affected by the proposed ACS amendment since only the NF RMPs within the CRGNSA would be amended (see BA section 5.11 for details regarding CRGNSA). The Preferred Alternative (Alternative A) of the Final Supplemental Environmental Impact Statement for *Clarification of Language in the 1994 Record of Decision for the Northwest Forest Plan; National Forests and Bureau of Land Management Districts Within the Range of the Northern Spotted Owl* (USDA and USDI in press) is assessed and evaluated with the RMP actions previously assessed for ESA consultation and summarized in this BA. Under the amendment, land managers continue to be required to design projects to comply with applicable standards and guidelines (S&Gs) in Sections C and D of Attachment A in the Record of Decision (ROD) (USDA and USDI 1994b), and other applicable standards in Resource Management Plans. No further finding of ACS consistency is required.

All RMPs for Forest Service and BLM administrative units within the Northwest Forest Plan area would be amended under the Proposed ACS amendment. Management of the Coquille Forest is also affected.

The action would not result in a major change to any RMP, nor would it alter their objectives or multiple-use goals. The action would not adjust management area boundaries. The amendment does not change the goals of the 1994 NWFP ROD. All components of the ACS (Riparian Reserves, Key Watersheds, WA and watershed restoration) remain in place. The amendment emphasizes a concept from FEMAT Chapter V (USDA et al. 1993) and the NWFP ROD, Page B-12 (USDA and USDI 1994b):

“Standards and guidelines prohibit and regulate activities in Riparian Reserves that retard or prevent attainment of Aquatic Conservation Strategy objectives.”

The amendment also clarifies that information in WA will be used to provide context for project planning, but is not a decision-making process in and of itself. This principle is emphasized in the NWFP ROD (USDA and USDI 1994b), the Final SEIS (USDA and USDI 1994a), and the 1995 *Federal Guide for Watershed Analysis* (USDA et al 1995). The amendment clarifies that:

- The proper scales for Federal land managers to evaluate progress toward achievement of the ACS objectives are the watershed and broader scales. No single project should be expected to achieve all ACS objectives.
- No management activities can be expected to maintain the existing condition at all scales and all times; disturbance from management activities must be considered in the context of the condition of the fifth-field watershed as a whole.
- Decision-makers are required to document how the agency used relevant information from applicable watershed analysis to provide context for project planning.
- To comply with Riparian Reserve Standards and Guidelines that reference ACS objectives, the decision maker must document that analysis has been completed, including a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability.

The amendment retains all existing components of the ACS, including Riparian Reserves, Key Watersheds, WA and watershed restoration as well as ACS objectives. It reinforces concepts about appropriate scales of analysis and the role of S&Gs. It removes the expectation that all projects must achieve all ACS objectives, and reinforces the role of WA in providing context for actions that may affect aquatic or riparian habitat.

For comparison purposes, existing ACS language (No Action Alternative) and the amendment language (Alternative A) are displayed in Table 18. The amendment changes language in Attachment A of the 1994 NWFP. The amendment to the RMPs in the NWFP area does not approve any individual projects. Individual projects are subject to site-specific analysis required by NEPA and other laws, policy and regulations.

Table 18. Comparison of No Action and Preferred Alternative (Alternative A) Wording

Excerpt	No Action (Existing)	Alternative A
Page B-10	<p>The important phrases in these standards and guidelines are “meet Aquatic Conservation Strategy objectives,” “does not retard or prevent attainment of Aquatic Conservation Strategy objectives,” and “attain Aquatic Conservation Strategy objectives.” These phrases, coupled with the phrase “maintain and restore” within each of the Aquatic Conservation Strategy objectives define the context for agency review and implementation of management activities. Complying with the Aquatic Conservation Strategy objectives means that an agency must manage the riparian-dependent resources to maintain the existing condition or implement actions to restore conditions. The baseline from which to assess maintaining or restoring the condition is developed through a watershed analysis. Improvement relates to restoring biological and physical processes within their ranges of natural variability.</p>	Deleted in entirety

Table 18. Comparison of No Action and Preferred Alternative (Alternative A) Wording (continued)

Excerpt	No Action (Existing)	Alternative A
Page B-10	<p>The standards and guidelines are designed to focus the review of proposed and certain existing projects to determine compatibility with the Aquatic Conservation Strategy objectives. The standards and guidelines focus on “meeting” and “not preventing attainment” of Aquatic Conservation Strategy objectives. The intent is to ensure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives. The decision maker will use the results of watershed analysis to support the finding. In order to make the finding that a project or management action “meets” or “does not prevent attainment of” the Aquatic Conservation Strategy objectives, the analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed, and how the proposed project or management action maintains the existing condition or moves it within the range of natural variability. Management actions that do not maintain the existing condition or lead to improved conditions in the long term would not “meet” the intent of the Aquatic Conservation Strategy and thus, should not be implemented.</p>	<p>The four components of the Aquatic Conservation Strategy (Riparian Reserves, Key Watersheds, watershed analysis, and watershed restoration), in combination with application of relevant standards and guidelines in Sections C and D (and other relevant standards in Resource Management Plans) are intended to achieve Aquatic Conservation Strategy Objectives.¹</p> <p>Under the Aquatic Conservation Strategy, the agencies must maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale over the long term. No management activities can be expected to maintain the existing condition at all scales and all times; disturbance from management activities must be considered in the context of the condition of the fifth-field watershed as a whole.²</p> <p>The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for project planning, recognizing that watershed analysis is not a decision-making process in and of itself, nor is watershed analysis a decision document. If watershed analysis is not required or available, or does not contain relevant information, the project record will provide evidence that project effects were considered relative to the watershed condition.</p> <p>Projects should be designed to comply with applicable standards and guidelines in Sections C and D (and other applicable standards in Resource Management Plans). No further finding of ACS consistency is required.</p> <p>To comply with Riparian Reserve Standards and Guidelines that reference ACS objectives, the decision maker must document that analysis has been completed, including a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given fifth-field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability.³</p>

FOOTNOTES

¹ Federal agencies may not be able to attain objectives within watersheds with relatively low proportions of Federal lands (see Northwest Forest Plan FSEIS page 3&4-82).

² The Federal Guide for Watershed Analysis (1995) discusses issues of scale and explains why the fifth-field watershed scale “satisfies many needs and offers a consistent format for reporting results of an analysis.” The Federal Guide states that analysis at the watershed scale “provides the context for management through the description and understanding of specific ecosystem conditions and capabilities.” Watershed analysis requirements are described later in Section B. All other requirements and uses of WA described on pages B-20 through B-30 of the ROD would remain unchanged.

³ The Federal Guide for Watershed Analysis discusses Range of Natural Variability on page 20.

Table 18. Comparison of No Action and Preferred Alternative (Alternative A) Wording
(continued)

Excerpt	No Action (Existing)	Preferred Alternative (Alternative A)
Page C-31	As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that may retard or prevent attainment of the Aquatic Conservation Strategy objectives. Watershed analysis and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds.	As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that may retard or prevent attainment of the Aquatic Conservation Strategy objectives at the 5 th field watershed scale over the long term. Watershed analysis and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds. To comply with Riparian Reserve Standards and Guidelines that reference ACS objectives, the decision maker must complete an analysis that includes a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given 5th field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability.

Three Additional Areas with Special Circumstances

Three areas governed with the NWFP ACS have special circumstances that warrant consideration in this BA. Those circumstances are discussed below for Mendocino NF, Wenatchee NF and Coquille Forest.

Mendocino NF

The Mendocino National Forest is located entirely within the NWFP area except for the Lake Red Bluff Recreation area which is located adjacent to the Sacramento River in the City of Red Bluff. This area is about 490 acres and includes campgrounds, trails, boat ramps, a fish ladder operated by the US Fish and Wildlife Service, and a non-profit Sacramento River Discovery Center. Various recreation activities are the primary use of the area. The most intensive use of the river occurs during boat racing and water skiing events that are covered under a special use permit. The RMP ROD stated that the NWFP ACS would be incorporated on the entire forest including the Lake Red Bluff area.

Wenatchee NF

There are approximately 25,000 acres or about 1% of the Wenatchee NF area that is outside the range of the Northern spotted owl and technically would not be under the Northwest Forest Plan. These lands are within the PACFISH ACS area but the Wenatchee NF RMP was not amended by the PACFISH decision notice. These lands are primarily along the Columbia River Breaks with other small parcels in the lower Wenatchee, Tieton and Naches watersheds. The lands are very dry with few perennial streams let alone fish habitat. The Forest is managing these lands using NWFP ACS specifically the S&Gs for the Riparian Reserves and WA to guide management. The

Forest Supervisor has committed to the continued management of these lands under the NWFP ACS in a letter addressed to the Forest Service Columbia River Basin PACFISH coordinator dated July 1, 1999 (USDA 1999).

Coquille Forest

The Proposed ACS amendment will also affect management of the Coquille Forest. In 1996 Congress passed an act creating the Coquille Forest from about 5400 acres of BLM administered lands within the area of the NWFP. These acres are now held in trust by the United States for the benefit of the Coquille Indian Tribe, and are no longer administered by the BLM. The Act required that management of the Coquille Forest lands will be subject to the standards and guidelines of Federal Forest plans on adjacent or nearby Federal lands, now and in the future. The adjacent Federal lands are Coos Bay BLM District lands; therefore, the Coquille Forest is affected by this proposed amendment to the Coos Bay BLM Resource Management Plan.

EFFECTS TO SPECIES OR CRITICAL HABITAT

Effects to Listed or Candidate Species

The effects to the ESA-listed or candidate species displayed in Table 2 by the continued implementation of the RMPs as amended by the proposed ACS amendment and the specified non-NWFP areas are described in sections 6.1.1 and 6.1.2, respectively. In Section 6.1.1.1 the effects of implementing the component parts of the ACS are described. This includes the Riparian Reserves, Key and non-Key Watersheds, Watershed Analysis, Watershed Restoration, ACS monitoring, and implementing S&Gs. Also included in Section 6.1.1.1 is a description of the effects of the land allocations of the NWFP to the fish species. The effects of implementing land management actions are described in Section 6.1.1.2. The land management actions include: 1) Watershed restoration; 2) Forest management, including roads, plantation management and release practices; 3) Recreation; 4) Livestock grazing; 5) Mining; 6) Riparian silvicultural practices; 7) Surveys and inventories; 8) Wildfire suppression; 9) Land exchanges and acquisitions; 10) Special forest products; and, 11) Actions under special use permits. The effects of the 3 specified non-NWFP areas, the Mendocino NF, Wenatchee NF and Coquille Forest, are discussed in sections 6.1.2.1, 6.1.2.2 and 6.1.2.3, respectively.

RMPs and Amendments

Numerous BLM and FS administrative units have concluded ESA consultations on continued implementation of their RMPs as previously amended or incorporating the Northwest Forest Plan, for ESA-listed fish species prior to the Preferred Alternative (Alternative A) (consultation history is provided in Table 3 and Table 4). The BAs and reinitiation letters for the prior consultations described the effects of the continued implementation of the RMPs (USDA 1995b, 1995c, 1995d, 1995e, 2000; USDI 1997b, 2000c, 2001; USDA and USDI 1997a, 1997b, 1998, 1999) on the ESA-listed fish species. In each instance, the regulatory agency arrived at a "No Jeopardy" conclusion in the corresponding BO.

The Northwest Forest Plan acknowledges that disturbances are natural occurrences within forested habitats and that management of this habitat without disturbance is impossible. Some level of disturbance is necessary, and even beneficial to the ecosystem. The clarified language for the ACS (as a result of Preferred Alternative A) is expected to result in improved decisions that reflect these concepts (USDA and USDI in press). Management of disturbance risks and management after natural disturbance are discussed on pages B-7 and B-8 of the NWFP ROD (USDA and USDI 1994b). A discussion of several strategies employed in the application of the ACS to approach the goal of maintaining the "natural" disturbance regime is found on page B-9. The Preferred Alternative (Alternative A) (USDA and USDI in press) does not change the intent of the Aquatic Conservation Strategy, "to restore and maintain the ecological health of watersheds and the aquatic ecosystems contained within them on Federal lands." (USDA and USDI 1994b, page B-9).

The proposed ACS amendment (USDA and USDI in press) does not result in environmental impacts beyond those already disclosed in the Northwest Forest Plan Final Supplemental Environmental Impact Statement (FSEIS) (USDA and USDI 1994a). The Northwest Forest Plan FSEIS disclosed programmatic effects of several alternatives for land management across the Northwest Forest Plan area, including the selected Alternative 9. The effects of the Preferred Alternative (Alternative A) in the ACS FSEIS (USDA and USDI in press) are consistent with the effects of Alternative 9 in the Northwest Forest Plan. These effects are discussed in Appendix B in the ACS FSEIS (USDA and USDI in press).

The effects to listed fish species by the implementation of the RMPs as amended by the Proposed Amendment to the ACS are presented in two sub-sections: 1). The effects of continued implementation of the ACS components; and, 2) The effects of continued implementation of programmatic categories of land management actions.

RMPs and the Proposed ACS Amendment

The ACS is a long-term strategy that seeks to prevent further degradation and restore habitat over broad landscapes. Although it may take decades to accomplish all of the objectives, some improvements in the aquatic ecosystems are expected within 10-20 years (USDA and USDI 1994b, page B-9). The USFS and BLM management activities are directed to be consistent with the ACS. The proposed ACS amendment directs

project design to comply with applicable S&Gs in Sections C and D (and other applicable standards in RMPs). No further finding of ACS consistency is required (USDA and USDI in press). Relevant information from WA will provide context for project planning.

The four major components of the ACS: Riparian Reserves, Key Watersheds, WA, and Watershed Restoration, in combination with application of pertinent S&Gs, are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. LSRs also are an important component of the ACS, because the S&Gs for LSRs generally increase protection for all stream types within them, especially in the longer term. Finally, there is a monitoring section specific to achieving the stated objectives of the ACS (USDA AND USDI 1994b, page B-32).

Implementation of the RMPs, consistent with the S&Gs included in the NWFP, is expected to result in improved habitat conditions (over various time scales) for resident and anadromous fish species on lands within federal ownership and show progress towards attainment of the nine ACS objectives. This, in turn, is expected to provide for increased survival of various life stages of these fish and an increased probability of restoring and maintaining viable populations.

During development of the NWFP, the Forest Ecosystem Management Assessment Team (FEMAT) assessed management alternatives to determine the probability of ensuring the viability of various plant and animal species. To accomplish this, the FEMAT convened assessment panels comprised of experts to elicit high quality judgments about expected effects of the alternatives on these species. The panelists' assessments resulted in likelihoods that each alternative would provide sufficient habitat on Federal lands to provide for various distributions of species populations over the 100 year assessment period (USDA et al. 1993).

The assessment of the management alternative implemented in the NWFP (option 9) concluded that there would be an 80 percent or greater likelihood of providing sufficient aquatic habitat to support stable, well-distributed populations of the seven salmonid races/species/groups evaluated (USDA et al. 1993). Except for the listed chum salmon, all of the species (including the various life forms e.g. sea-run, resident and seasonal races) addressed in this BA were evaluated by the FEMAT (USDA et al. 1993). This analysis of available aquatic habitat prepared for the management guidance provided in the NWFP was not quantitative. However, this assessment represents the best available analysis of the expected effects of implementation of the LRMPs and RMPs as amended by or incorporating the NWFP on fish habitat on Federal lands in the action area.

Chum salmon are the only salmonid fish species addressed in this BA whose likelihood of survival wasn't directly assessed by the FEMAT (USDA et al. 1993). The reason this species was not considered was their limited distribution on federal lands within the range of the northern spotted owl. Because of the limited distribution of chum salmon on federal land, the administrative units may provide a limited amount of spawning habitat. Chum salmon, like other salmon species, require clean gravels to reproduce successfully.

Since the seven salmonid fish groups serve as reasonable indicators of aquatic ecosystem health, it is reasonable to assume that habitats of chum salmon on federal land would be similarly affected by the implementation of the NWFP.

The ACS Objectives

The proposed ACS amendment does not change the ACS objectives. The nine objectives range from maintaining and restoring the distribution, diversity, and complexity of watershed and landscape-scale features to maintaining and restoring habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species (USDA and USDI 1994b, page B-11).

The proposed amendment has clarified how ACS objectives are to be used. There is not a requirement to determine the consistency of site-scale projects with each ACS objective.

The FSEIS states that the four components of the ACS, in combination with application of relevant S&Gs in Sections C and D (and other relevant standards in Resource Management Plans) *are intended to achieve Aquatic Conservation Strategy Objectives*. (Emphasis added). Consequently, "Projects should be designed to comply with applicable standards and guidelines in Sections C and D (and other relevant standards in Resource Management Plans). No further finding of ACS consistency is required (USDA and USDI in press)." However, it should be kept in mind that federal agencies may not be able to obtain objectives within watersheds with relatively low proportions of federal lands (USDA and USDI 1994a at 3&4-82).

The ACS FSEIS clarifies the spatial and temporal scales at which the ACS is intended to operate. They are the fifth field watershed scale and the long-term:

"Under the Aquatic Conservation Strategy, the agencies must maintain existing conditions or implement actions to restore conditions at the fifth-field watershed scale over the long term. No management activities can be expected to maintain the existing condition at all scales and all times; disturbance from management activities must be considered in the context of the condition of the fifth-field watershed as a whole;

"As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that may retard or prevent attainment of the Aquatic Conservation Strategy objectives at the 5th field watershed scale over the long term."

The Federal Guide for Watershed Analysis (USDA et al.1995) discusses issues of scale and explains why the 5th field watershed scale "satisfies many needs and offers a consistent format for reporting results of an analysis." The Federal Guide states that

analysis at the watershed scale “provides the context for management through the description and understanding of specific ecosystem conditions and capabilities.”

In addition, “The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for project planning, recognizing that watershed analysis is not a decision-making process in and of itself, nor is watershed analysis a decision document.”

ACS Components

1) Riparian Reserves

Riparian Reserves are a primary component of the ACS. The proposed amendment has not changed the role of Riparian Reserves. Riparian-dependent resources would continue to receive primary emphasis within Riparian Reserves. Special S&Gs would continue to be applied. “As a general rule, S&Gs for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the ACS objectives.” (USDA and USDI 1994b, page C-31). The NWFP ROD states in several places that the Riparian Reserve S&Gs are “necessary to meet” the ACS objectives or are designed “to meet” the objectives. Consequently, compliance with Riparian Reserve S&Gs provides a measure of assurance that a project is consistent with the ACS. The FSEIS (USDA and USDI in press) states: “Projects should be designed to comply with applicable standards and guidelines in Sections C and D (and other relevant standards in Resource Management Plans). No further finding of ACS consistency is required.”

S&Gs for Riparian Reserves are more extensive than for any other ACS component and strongly influence the design and application of management actions within the Riparian Reserves to conserve riparian-dependent resources, including ESA-listed fish species. The Preferred Alternative (Alternative A) for the ACS FSEIS defines the intent of RR S&Gs that reference ACS objectives. Interpretation and an example of application of this type of S&G under the proposed ACS amendment are presented later in this section (6.1.1.1 ACS Components, Standards and Guidelines).

Riparian Reserves capture all historic or current ESA-listed fish species habitat and unoccupied stream and riparian areas that contribute to maintaining current populations of ESA-listed fish species on Federal lands within the NWFP area. “Riparian Reserves are portions of watersheds where riparian-dependent resources receive primary emphasis and where special S&Gs apply” (USDA and USDI 1994b, page B-12). “WA and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds.” (USDA and USDI 1994b, page C-31). Riparian Reserve S&Gs are second in priority of all land allocations, (second only to Congressionally Reserved Areas); S&Gs for Riparian Reserves are added to those for the land allocations overlain by reserves ((USDA and USDI 1994b), page C-1).

In 1994, the preferred alternative for the NWFP incorporated "Riparian Reserve Scenario 1" into the ROD. This extended additional protections to aquatic resources on intermittent streams by expanding the widths in the associated Riparian Reserves. The resultant analysis in the FSEIS determined an 80% or higher likelihood of the NWFP attaining aquatic habitat of sufficient quality, distribution, and abundance on federal land for the seven salmonid races/species/groups evaluated. This increased probability resulted from reduced timber harvest with the wider prescribed Riparian Reserve widths on intermittent streams in Tier 2 Key Watersheds and non-Key Watersheds (FSEIS Chapter 3&4, page 198). It also reduced further risks to these streams from management-induced disturbances. The ROD identified 2,627,500 acres as Riparian Reserve under Scenario 1, which was estimated from Matrix lands only. Post- ROD, actual mapping of the riparian reserve system on many administrative units has led to an increase in acreage within the Riparian Reserve network (USDA and USDI 1997b section C, p. 4 and section E1a, p. 25; USDA and USDI 1999 p. 4.).

According to the ROD, the interim Riparian Reserve widths, (the initial default widths), are designed to provide a high level of fish and riparian protection until watershed and site-specific analysis can be completed. There has been limited adjustment of the interim Riparian Reserve widths established when the NWFP ROD was signed (details in Section 3.21 Implementation Monitoring). In addition, overall compliance with S&Gs has exceeded 95% based upon actions sampled for the period 1996-2001 across the NWFP area. The implementation monitoring for the period 1996-2001 for all S&Gs included those specific to actions within Riparian Reserves. One can conclude that this level of compliance strongly supports the attainment of ACS objectives since "Standards and Guidelines prohibit and regulate activities in Riparian Reserves that retard or prevent attainment of ACS objectives." (USDA and USDI 1994b at B-12).

As explained earlier in the ACS objectives section, the FSEIS clarifies the spatial and temporal scales for which the Riparian Reserve S&Gs are designed to operate: "As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that may retard or prevent attainment of the Aquatic Conservation Strategy objectives *at the fifth-field watershed scale over the long term.*" (Emphasis added).

In summary, Riparian Reserves, as addressed above, are a major component of the ACS and are extremely important to the conservation of ESA-listed fish species. The entire current and historic ESA-listed fish species distribution on FS and BLM managed lands within the NWFP area is contained within Riparian Reserves, which contribute to ESA-listed fish species conservation by protecting the health of the aquatic system and its dependent species. Implementation monitoring reports for the period 1996-2001 indicate that projects are being designed and implemented consistent with S&Gs, and therefore are contributing towards attainment of ACS objectives. Attainment of ACS objectives is a benefit to ESA-listed fish species. In addition, the network of Riparian Reserves has only been minimally modified according to implementation monitoring reports. Therefore, the assumptions of the benefits to fish and aquatic resources based upon the extent of Riparian Reserves as originally envisioned remain valid. Riparian Reserves

will help maintain and restore riparian structures and functions to benefit fish species (USDA and USDI 1994b, page 7).

2) Key and Non-Key Watersheds

The proposed amendment would not change the numbers or distribution of Key and Non-Key watersheds in the NWFP area. The role of Key watersheds would not be changed. Key watersheds would continue to serve as refugia, providing (or are expected to provide) high quality habitat. Key watersheds would continue to be crucial for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species, and remain highest priority for restoration.

Both Key and non-Key Watersheds contain ESA-listed fish species. Only in the Key Watersheds, roadless areas in non-Key Watersheds, and Riparian Reserves (in all watersheds) is a WA specifically required prior to management. In Key Watersheds and Riparian Reserves, WA is the process used to develop a baseline from which to assess maintaining or restoring the condition and provide context for project planning. Even without a completed WA, some form of analysis is necessary for project planning in all watersheds.

WA has been completed in a large majority of Key Watersheds across the NWFP area (Table 14). Nineteen of 25 BLM and FS administrative units reported 100% of their Key Watershed acreage had been covered by WA. Two administrative units had no Key Watersheds, two did not provide data, and six others reported 67-91% of their Key Watershed acreage had completed WA. Conservation of ESA-listed fish species on Federal lands requires a broad, landscape level appreciation of their current and historic distribution, and also their need for high quality, complex, and interconnected habitats at multiple scales. Information on the range of current and historic distribution of fish species is typically presented in WA.

Key Watersheds are intended to function as refugia. Currently, Key Watersheds are composed of areas with high quality aquatic and riparian conditions that will serve as anchors for the potential recovery of depressed stocks, and lower quality habitat areas that have the potential to become future sources of high quality habitat with the implementation of a comprehensive restoration program. Key Watersheds were not intended by the NWFP ROD to be, nor are they described therein, as a land allocation. Rather, Key Watersheds overlay other land allocations and provide additional S&Gs that are added to the S&Gs of the other allocations. The principal S&Gs that apply to Key Watersheds and may serve to add protection for ESA-listed fish species are those relating to roads (achieve a net reduction or no net increase in roads; no new roads in inventoried roadless areas within Key Watersheds), and the requirement to conduct WA prior to ground-disturbing management activities. The benefits of Key Watersheds accrue largely from being composed of relatively functional, (presently containing both high quality and degraded habitat), habitat areas and their overlap with major portions of relatively protective land allocations (e.g., LSRs, Congressionally Reserved Areas, and Administratively Withdrawn Areas). This interpretation is supported by a review of the

ROD (USDA and USDI 1994b), the FEMAT Report (USDA et al. 1993) and the FSEIS (USDA and USDI 1994a).

Management actions within Key Watersheds will be consistent with maintaining present or restoring future refugial conditions which is beneficial to ESA-listed fish species.. The Key Watershed network will provide, or is expected to provide over time, larger areas of high quality habitat and contribute to aquatic ecosystem integrity. Undoubtedly, a functional network of watershed scale refugia will contribute significantly to conservation of ESA-listed fish species.

Management activities can occur within Key Watersheds. As described above, WA (required prior to management activities, except minor activities such as those categorically excluded under NEPA) develops a baseline from which to assess maintaining or restoring the condition and provides context for the design and site-specific assessment of activities. Some short-term negative effects may occur to ESA-listed fish species as a result of implementing certain restoration activities in Key Watersheds. Long-term beneficial effects to ESA-listed fish species will occur with proper restoration techniques. See the watershed restoration discussion (below) for possible short- and long-term effects from watershed restoration.

The designation of Tier 1 and Tier 2 Key Watersheds further prioritizes management direction for watershed restoration. Tier 1 Key Watersheds are designated for anadromous fish and bull trout conservation; Tier 2 Key Watersheds are designated for contribution of high quality water to support a range of downstream beneficial uses. ESA-listed fish species are strongly associated with upstream sources of cool, high quality water, such as seeps, springs, and natural upwellings. Clear, cool water is needed for all life stages and especially during the spawning and rearing phases.

The reduction of existing system and non-system road mileage outside Roadless Areas is a S&G for Key Watersheds. Implementation monitoring reports for the years 1999, 2000 and 2001 evaluated the status of road mileage in Key Watersheds. The trend has been a reduction in total road miles in Key Watersheds.

Of seven Key Watersheds reviewed for the 1999 report, six had avoided road construction, six had reduced road mileage, and one had maintained road mileage. Of approximately 1861 system road miles existing in 1994, 84 miles had been decommissioned and 13.3 new miles had been constructed, a net reduction of 70.7 miles, at a ratio of 6.3 to 1. For non-system roads, 11.9 miles had been decommissioned while 10.9 miles had been constructed, for a net reduction of 1.0 mile (Regional Implementation Monitoring Team 1999).

There was a net reduction of 82.2 miles (4%) of system roads in 12 Key Watersheds reported in the 2000 implementation monitoring report (Regional Implementation Monitoring Team 2000). The ratio of miles of road decommissioned to miles of road constructed was 9.6 to 1 (91.8 miles to 9.6 miles). Information was not available for status of non-system roads in six of the Key Watersheds. A net reduction of 11.3 miles (5.9%) occurred in the other six Key Watersheds. The ratio of miles decommissioned to miles of road constructed was 2 to 1 (23 miles to 11.7 miles).

System road mileages were reduced by 195.4 miles (11%) in 12 Key Watersheds evaluated for the 2001 implementation monitoring report ((Regional Implementation Monitoring Team 2001). The ratio of miles of road decommissioned to miles of road constructed was 90 to 1 (197.7 miles to 2.2 miles). The 2001 implementation monitoring effort did not report on non-system road mileage status for the Key Watersheds.

The status of road mileage in the 31 Key Watersheds evaluated by the Regional Implementation Monitoring Team is likely representative of Key Watersheds throughout the NWFP area. There has been an aggressive effort to reduce road mileage by road obliteration and decommissioning, while new road construction has been extremely limited. Benefits to ESA-listed fish species occur when existing road networks are reduced in Key Watersheds, particularly when the road segments removed were formerly connected to stream channels. The potential for catastrophic introduction of sediment when a culvert becomes plugged and the road prism fails is reduced. The concentration of flows by road segments augmenting the stream network is reduced. Chronic sediment delivery from native surface roads, fill slopes and cut slopes is also reduced.

3) Watershed Analysis

The proposed amendment clarifies the use of WA. Formerly, a decision maker was directed to use the results of WA to support the finding that a proposed activity was consistent with the ACS objectives. (USDA and USDI 1994b at B-10). Current language may imply too simplistic a relationship between projects and attainment of ACS objectives by requiring a “finding of consistency” with ACS objectives for all projects. Projects must be considered in a watershed scale or broader context to determine whether potential effects to aquatic ecosystems are acceptable.

The ACS FSEIS (USDA and USDI in press) states: “Projects needed to achieve Northwest Forest Plan goals have been delayed or stopped due to misapplication of certain passages in the ACS.” “This interpretation establishes an impossible expectation for demonstrating that a project follows the ACS (USDA and USDI in press).” Consequently, the proposed amendment clarifies that: “Projects should be designed to comply with applicable standards and guidelines in Sections C and D (and other relevant standards in Resource Management Plans). No further finding of ACS consistency is required.” The ACS FSEIS also states that “No management activities can be expected to maintain the existing condition at all scales and at all times; disturbance from management activities must be considered in the context of the fifth-field watershed as a whole.”

The proposed amendment emphasizes that relevant information from WA will be used to provide context for project planning. This does not imply that WA recommendations would be utilized as decisions, as the WA is not a decision making document. The information provided by the WA would help provide context and support for actions. This does not diminish the importance or value of WA. The Preferred Alternative (Alternative A) for the ACS FSEIS also defines the intent of S&Gs that reference ACS objectives. Interpretation and an example of application of this type of S&G is presented later in this section (6.1.1.1 ACS Components, Standards and Guidelines). WA will be a

primary source of information for determining if a proposed activity follows this type of RR S&G.

The proposed amendment also establishes a requirement to document how information from WA was used for project planning. "The project record will demonstrate how the agency used relevant information from applicable watershed analysis to provide context for project planning, recognizing that watershed analysis is not a decision-making process in and of itself, nor is a watershed analysis a decision document (USDA and USDI in press)." This requirement will be met in NEPA decision documents. Decision-makers are encouraged to be as specific as needed in the decision documents, explaining how the action is consistent with appropriate plans, starting with the applicable RMP and including subordinate plans. Since the ACS amended or is incorporated in FS and BLM RMPs, line officers will continue to ensure that projects are compliant with the ACS.

WA is not a decision-making document. The proposed amendment explicitly states "...recognizing that watershed analysis is not a decision-making process in and of itself, nor is a watershed analysis a decision document (USDA and USDI in press)." This statement supports an understanding about WA within the original NWFP ROD: "Watershed analysis will focus on collecting and compiling information within the watershed that is essential for making sound management decisions. It will be an analytical process, *not a decision-making process with a proposed action requiring NEPA documentation (emphasis added)*." (USDA and USDI 1994b), p. B-20).

The Federal Guide for Watershed Analysis (1995) discusses issues of scale and explains why the fifth-field watershed scale "satisfies many needs and offers a consistent format for reporting results of an analysis." The Federal Guide states that analysis at the watershed scale "provides the context for management through the description and understanding of specific ecosystem conditions and capabilities." All other requirements and uses of WA described on pages B-20 through B-30 of the ROD would remain unchanged with the proposed amendment. WA will continue to be: "...one of the principal analyses that will be used to meet the ecosystem management goals of these standards and guidelines." (USDA and USDI 1994b), p.E-20). WA is required, (with some exceptions for minor activities), in Key Watersheds, remaining undeveloped portions of roadless areas in non-Key Watersheds, and in Riparian Reserves prior to determining how proposed land management activities meet ACS objectives. The Federal Guide for WA (USDA et al. 1995) outlines a six-step process and suggests that teams planning to conduct a WA review both the analysis overview and each of the six steps. Modules or techniques to gather data for synthesis with other team members and the final report are optional. Examples of modules that may be used are the Washington State Timber Fish and Wildlife (TFW) WA modules, erosion and hydrology modules, physical stream habitat and aquatic species viability modules, and the Riparian Reserve module (discussed above under Riparian Reserves). WA is assisting the FS and BLM focus on an ecosystem approach to land and water management, which will likely have beneficial effects to ESA-listed fish species.

A large proportion of the land area encompassed by the NWFP has been assessed using WA, thereby providing a context for management decisions in light of the ACS. Of the 27 BLM and FS administrative units reporting WA completion for land area administered under the NWFP in Table 14, 20 report more than 80% of land area assessed by WA, 14 report greater than 90%, and seven report 100%. WA results and recommendations are intended to focus on the goal of maintaining and restoring whole aquatic ecosystems. However, implementing recommendations resulting from WA is discretionary and part of the NEPA decision-making process. Generally, use of a detailed WA for decision-making is beneficial for ESA-listed fish species. It provides information useful for establishing the environmental baseline used in Section 7 consultations and also forms the basis for project design that is consistent with the ACS.

4) Watershed Restoration

The proposed amendment does not change any aspect of watershed restoration under the ACS.

The proposed amendment is designed to increase agency success in planning and implementing projects that follow NWFP principles, including watershed restoration. Watershed restoration relies on WA and planning to identify restoration activities with the greatest likelihood of success.

Watershed restoration is occurring in many watersheds, has been focused in Key Watersheds, and overall represents a benefit to ESA-listed fish species. The BLM and FS have invested millions of dollars since the inception of the NWFP in watershed restoration actions. Fish habitat has been restored directly or indirectly by: 1) Reducing sediment and improving flow regimes by decommissioning roads, erosion control, and upgrading sizes of culverts; 2) Improving instream fish habitat complexity; 3) Improving fish passage at road crossings; and, 4) Restoring riparian vegetation functions by planting, seeding and thinning riparian areas. Table 13 displays a compilation of watershed restoration accomplishments by FS and BLM administrative units.

A particular focus of watershed restoration has been the reduction of road mileage. The status of road mileage for Key Watersheds examined in the 1999 to 2001 NWFP implementation monitoring efforts was described in the Key Watersheds section of this BA. Table 13 displays a total of 1,770 miles of road decommissioning for all administrative units in the NWFP area for differing time periods. This includes Key and non-Key watersheds. Table 15 displays status of road mileage by administrative units across the NWFP area. While the majority of administrative units exhibit a net reduction for road mileage, this is confounded by the fact that the outcome of initiatives to validate management jurisdiction of road segments is also included in the net totals. Consequently, the numbers in Table 15 are the net outcome of the miles of road decommissioned, small increases in miles of road constructed, and changes in management jurisdiction for road mileage between the BLM, FS, counties, states and others.

Some short-term adverse effects such as increased turbidity or streambed sedimentation may accrue from restoration activities such as culvert removal and replacement, road obliteration, and activities occurring within the active stream channel or Riparian Reserves. However, these actions should provide a long-term benefit for ESA-listed fish species.

5) ACS Monitoring

The proposed amendment does not change any aspect of ACS monitoring. Monitoring programs will continue. Implementation, effectiveness, and validation monitoring are and will be conducted to determine effectiveness of management practices, validate assumptions of the NWFP, and to evaluate the success of the NWFP in restoring and maintaining aquatic and riparian ecosystems to desired conditions within the NWFP area. Monitoring provides a feed-back loop to fuel adaptive management necessary to insure compliance with the ACS and proper implementation of the NWFP. Effectiveness monitoring is critical to evaluate the effects of implementing land management actions under the NWFP and ACS. Analysis of effectiveness monitoring results in an adaptive management framework may result in modifying future actions and components of the ACS. The outcome may further avoid or minimize negative management impacts on ESA-listed fish species and their habitat.

Implementation monitoring conducted by the REO from 1995 to present has determined that there has been a greater than 95 percent compliance rate with S&Gs for land management activities. This indicates that BLM and FS administrative units have a good understanding of the S&Gs and their use in project design. As a consequence, potential adverse effects to ESA-listed fish from land management actions are being reduced.

The AREMP project has not been in place for a sufficient time as an effectiveness monitoring program to detect trends in watershed conditions across the NWFP area. In the first two years of the program the focus was on logistical and sampling issues. The pre-pilot effort in 2000 developed and evaluated the organizational structure needed to operate the module; tested and compared procedures and sampling designs with subwatersheds as recommended by interagency expert teams; and developed cost estimates for implementation (Moyer et al. 2001). The pilot effort in 2001 evaluated logistical, sampling, and quality control issues, and created a decision support model to evaluate the condition of individual sample reaches and watersheds.

6) Standards and Guidelines

Implementation of S&Gs is crucial towards attaining the goals of the ACS. The most extensive set of S&Gs in the ACS is associated with Riparian Reserves, which encompass all of the habitat for the present and historic distribution of ESA-listed fish species. "As a general rule, S&Gs for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the ACS objectives." (USDA and USDI 1994b, page C-31). The ACS FSEIS adds to this sentence to clarify the appropriate temporal and spatial scales: "As a general rule, S&Gs for Riparian Reserves

prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the ACS objectives at the 5th field watershed scale over the long term.”

The NWFP ROD states in several places that the Riparian Reserve S&Gs are “necessary to meet” the ACS objectives or are designed “to meet” the objectives. Consequently, compliance with Riparian Reserve S&Gs (which are a subset of all NWFP S&Gs) provides a measure of assurance that a project is consistent with the ACS. The FSEIS (USDA and USDI in press) states: “Projects should be designed to comply with applicable standards and guidelines in Sections C and D (and other applicable standards in Resource Management Plans). No further finding of ACS consistency is required.”

S&Gs strongly influence the design and application of management actions within the Riparian Reserves to conserve riparian-dependent resources, including ESA-listed fish species and their habitat. The Riparian Reserve S&Gs are defined by type of land management activity and are generally prescriptive. The Preferred Alternative (Alternative A) for the ACS FSEIS defines the intent of S&Gs that reference ACS objectives: “To comply with Riparian Reserve Standards and Guidelines that reference ACS objectives, the decision maker must complete an analysis that includes a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given 5th field watershed, and how the project or management action maintains the existing condition or restores it toward that range of natural variability.” WA and other sources will provide the information necessary to complete these analyses. The Federal Guide for Watershed Analysis (USDA et al. 1995) discusses range of natural variability on page 20. Relevant information for management activities with the potential to affect habitat for ESA-listed fish species includes baseline conditions and trends for watershed processes and habitat.

Consequently, those S&Gs that direct one to use perform such an analysis mean:

1) Develop a proposed action or evaluate an ongoing action in the context of an understanding of conditions and trends for watershed processes and habitat at the scale of a watershed: and, 2) incorporate an understanding of the RNV for the watershed processes and habitat.

An example is illustrative. GM-1 reads: “Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy Objectives. If adjusting practices is not effective, eliminate grazing.” Under the proposed amendment, one is directed to use relevant information from the applicable WA to provide context for project planning. Other sources would be used to supplement WA information if needed. Relevant information for important physical and biological components of a given 5th field watershed in this case (for grazing allotments which include riparian areas) may include the baseline conditions and trends for riparian vegetation, bank stability, proportion of fine sediment in streambeds, water temperature, and width-to-depth ratio at the scale of the watershed, as well as the RNV for those watershed processes/habitat elements. Information on the distribution of fish species and locations of particularly important habitat areas is also relevant. This information, along with monitoring results,

would provide a context for determining whether or not grazing practices should be adjusted or eliminated. If the action, at the site scale, impacted the conditions at the watershed or larger scales, so they were not operating within or moving toward the range of natural variability, or key indicators (i.e. width-to-depth ratio) could not be maintained at the watershed scale with implementation of the action, it would be modified or eliminated.

In addition to S&Gs for Riparian Reserves, S&Gs are described in Sections C and D of the NWFP ROD (USDA and USDI 1994b) for Key Watersheds, Designated Areas and Matrix, Late-Successional Reserves, Adaptive Management Areas, Managed Late-Successional Areas, and Administratively Withdrawn Areas. While not all of the S&Gs are aimed at protecting riparian-dependent resources, some of those that largely target conservation of terrestrial habitat will indirectly benefit riparian-dependent resources. For example, in LSRs, no harvest is allowed in stands over 80 years old west of the Cascades (110 years in the Northern Coast Adaptive Management Area) (USDA and USDI 1994b at C-12) and road construction is not recommended unless potential benefits exceed the costs of habitat impairment (C-16). This will result in fewer ground disturbing activities and their potential effects.

WA and the S&Gs for Key Watersheds are important to accomplish the ACS objectives. WA is required in Key Watersheds and all roadless areas prior to resource management. It is also required to change Riparian Reserve widths in all watersheds (USDA and USDI 1994b at C-12). S&Gs for Key Watersheds are displayed on page C-7 of the NWFP ROD. There are five S&Gs for Key Watersheds and each of them provides potential benefits for conservation of ESA-listed fish species and their habitat: 1) New roads are prohibited in remaining unroaded portions of inventoried (RARE II) roadless areas. This will reduce the potential flow and sediment effects from road construction; 2) Existing road mileage is expected to be reduced outside roadless areas. If funding is insufficient, there will be no net increase in roads in Key Watersheds. This will reduce negative effects of existing roads on the landscape to water quality; 3) Key Watersheds are highest priority for watershed restoration. This focuses funding resources for restoration of aquatic and riparian habitat in these refugia areas; 4) As described above, WA is required prior to management activities, except minor activities such as those categorically excluded under NEPA (but not including timber harvest); and, 5) WA is required before timber harvest. The last two S&Gs require an understanding of baseline conditions and trends for watershed processes and habitat conditions before designing actions in Key Watersheds. This will generally result in projects designed to be protective of aquatic habitat.

In summary, the implementation of S&Gs, particularly those for Riparian Reserves, Key Watersheds, and Watershed Analysis, are beneficial to ESA-listed fish species and critical habitat by providing guidance for the design, prioritization, and implementation of actions with the potential to affect riparian-dependent resources.

7) Land Allocations and Habitat for ESA-Listed Fish Species

The land allocations result in approximately 80% of federal lands in some form of reserve status across the NWFP area where land management actions are prohibited or strictly regulated. This provides benefits to ESA-listed fish species by minimizing the amount of ground-disturbing activities and potential adverse impacts to water quality and fish habitat. Please see text in section 6.1.1.1 for a description of how implementation of the components of the NWFP, including the ACS and land allocations, interact over time to restore aquatic and riparian habitat conditions and processes.

The Riparian Reserves land allocation was determined for the NWFP FEIS through a series of samples in the NWFP provincial areas (USDA and USDI 1994a). These samples were taken only in the Matrix land allocation area and resulted in an estimated 39% of the NFP Matrix lands being comprised of Riparian Reserves. Using this series of samples, it is estimated the other NFP land allocations within the Olympic Peninsula, WA Western Cascades, OR Western Cascades, WA Eastern Cascades and OR Eastern Cascades physiographic provinces are comprised of an average of 46%, 35%, 27%, 31%, and 15% Riparian Reserves, respectively (USDA and USDI 1999). However, FS and BLM analyses of Riparian Reserve land allocations have determined the NWFP FEIS underestimated the Riparian Reserve area of some provinces, especially the OR and WA Coastal areas, by as much as 74 % (USDA and USDI 1999, USDA and USDI 1997a, USDA and USDI 1997b).

Specific to habitat for bull trout, the majority of the FS and BLM lands pose a low or no potential for adverse effects. The FWS bull trout BO for the RMPs (USDI 2000) identified the following land allocations as low or no risk to bull trout: Congressionally Reserved, Administratively Withdrawn, and LSRs in Key Watersheds. These three land allocation areas encompass 64%, 77% and 84% of occupied habitat for the Columbia, Klamath and Puget Sound/WA Coast bull trout DPSs, respectively (USDI 2000). All other land allocations were identified as a moderate potential for adverse effects except for Riparian Reserves. However, the BO does not account for the Riparian Reserves of those land allocations since the Riparian Reserves were not mapped for the NWFP FSEIS.

Accounting for the Riparian Reserves would substantially reduce the FS and BLM land area identified by the FWS BO as posing a potential moderate risk to bull trout and their habitat. Using the average value of 39% Riparian Reserves for Matrix lands (USDA and USDI 1994a) and applying that to the percentage of all of the land allocations described in the 2000 bull trout BO as posing a moderate risk to bull trout, the result is approximately 22%, 14% and 10% of the land area posing a moderate risk to bull trout in the Columbia, Klamath and Puget Sound/WA Coast bull trout DPSs, respectively.

The NOAAF did not ascribe risk ratings to anadromous fish by land allocations in their Plan-level BOs and COs. The FS and BLM believe that the land allocations where most of the potential ground-disturbing actions may occur include Matrix, Adaptive Management Areas, and Managed Late-Successional areas. An assessment can be made for these land allocations for the anadromous fish ESUs with land allocation information displayed in the 1997 plan-level BA for Oregon and Washington BLM and FS

administrative units (USDA and USDI 1997b). The sum of the three land allocations, when adjusted to represent Riparian Reserves that overlay them at 39% have the following outcome: 26.1% of the land area in the Lower Columbia River steelhead ESU; 23.5% of the land area in the Middle Columbia River steelhead ESU; 14.6% of the Upper Columbia River steelhead ESU; 25.5% of the Lower Columbia River/Southwest Washington Coho salmon ESU; and 6.8% of the Puget Sound/Straight of Georgia Coho salmon ESU. This range of percentages (6.8 to 25.5) are likely representative of anadromous fish ESUs elsewhere in the NWFP area.

Actions implemented under the RMPs

The FS and BLM administrative units implement many of the same land-use practices, but the levels of activities and outputs vary depending on local circumstances. Although RMPs set important parameters for the authorization of specific projects, with some exceptions, RMPs do not provide the final authorization for project implementation. Final authorization of projects depends on the analysis of site-specific effects and consistency with appropriate management direction and legal requirements.

Because such a wide variety of activities and projects are directed by the amended RMPs, and many of these require interdisciplinary (ID) team development, WA, review pursuant to the National Forest Management Act (NFMA) and National Environmental Policy Act (NEPA) and other analysis and documentation before they can proceed, the FS and BLM cannot evaluate the effects of individual projects in this BA. Individual projects that may affect ESA-listed fish species are subject to ESA section 7 consultation requirements, and will be addressed in ESA consultations at the time such actions are proposed.

It is not anticipated that the proposed amendment will result in changes to the design of actions under the RMPs. The design of projects has been and will continue to be driven by the goals of the NWFP and shaped by land allocations, S&Gs, relevant information from WA, NEPA analysis, site-specific Best Management Practices, and the results of the streamlining consultation process during ESA consultation. Decision makers will continue to document that projects are consistent with RMPs and therefore the ACS of the NWFP that is integrated in the RMPs. Project implementation will continue to be in accordance with NEPA decisions and, where formal ESA consultation is required, with the terms and conditions of BOs. Monitoring will continue to evaluate whether or not projects were implemented as designed, in accordance with S&Gs and with contract specifications, and whether or not they are effective in meeting project goals.

A wide range of activities may take place when RMPs are implemented. Some of the actions may negatively affect ESA-listed fish species or critical habitat. These effects are typically short-term, transitory and localized, because implementation of the ACS, including land allocations, S&Gs, project-specific BMPs, and project planning in the context provided by WA, result in project designs which are consistent with maintaining or restoring ecological processes at the 5th field watershed scale over the long term. Other actions, such as watershed restoration, will directly or indirectly have beneficial effects to ESA-listed fish and their habitat.

Another element of the NWFP and ACS affecting ESA-listed fish and their habitat are the beneficial indirect effects of land allocations and standards and guidelines within established reserves. Riparian Reserves, Late Successional Reserves and their accompanying S&Gs limit the size and scope of vegetation management activities and road construction which can occur within them. Consequently, natural processes associated with vegetation re-growth in areas previously disturbed by human activities or natural events provide benefits to habitat of ESA-listed fish species by: 1) Creating increased shade canopy over streams; 2) Reducing erosion; 3) Providing future large woody debris; 4) Building stream channel sinuosity and complex instream habitat; and 5) Buffering sediment delivery from upslope sources. In areas in good condition within the reserves, high quality habitat is maintained.

Effects of Individual and Groups of Actions

A general overview of potential effects to ESA-listed fish species or their critical habitat associated with actions which may be implemented under the RMPs follows. As individual projects are designed they will receive site-specific analyses to determine the extent of the environmental impacts and the effects on proposed or listed species and their habitat. Whenever possible, it is anticipated that the effects will be reduced because the actions will be designed and mitigated in accordance with the NWFP land allocations and the ACS, including S&Gs, incorporating site-specific Best Management Practices, and using relevant information from WA. The NOAAF identified the specific benefits of the NWFP for providing short-term protection and long-term recovery of aquatic habitats (USDC 1997b, USDC 1996b).

Watershed Restoration. Watershed restoration activities may have short-term adverse effects on salmonids and their habitats, however the long-term effects should be beneficial (USDC 1997b). The primary potential negative effect of culvert replacements and road decommissioning is a short-term increase in fine sediment and turbidity to streams. Turbidity dissipates quickly once construction is completed for culvert replacements. Turbidity may increase with rainfall events during the first winter, depending upon vegetation regrowth and effectiveness of mulching at culvert replacement sites and decommissioned road segments. Fine sediment introduced by project activities is evident in stream channels for short distances downstream, but usually is moved downstream as bedload and becomes undetectable in stream channel substrate after the first winter of storm flows.

Benefits realized from replacement or upgrading of culverts at stream crossings include restoration of passage for fish, flood flows and bedload (USDC 1997b). Road decommissioning is perhaps the most beneficial action for long-term restoration of aquatic habitats (USDC 1997b). Regarding instream habitat enhancement structures, the NOAAF agrees with fishery scientists who concluded that the benefits of these projects are usually short-term in effect, though they may be appropriate for limited use to augment longer-term riparian rehabilitation and sediment source reduction (USDC 1997b).

and USDC 1996a). The NWFP (page B-32) states that instream restoration will be accompanied by riparian and upslope restoration if watershed restoration is to be successful. Also, the S&Gs for riparian reserves (NWFP, pg. C-37, WR-3) indicate that mitigation or planned restoration cannot substitute for preventing habitat degradation. Additional S&Gs for restoration activities in Riparian Reserves are also in the NWFP ROD (WR-1, FW-1, p. C-37) (USDA and USDI 1994b). Actions described above may also cause minor, short-term degrading impacts on instream habitat. Work within stream channels associated with these actions may be considered to have a reasonable certainty of incidental take should any ESA-listed fish species be present. Depending on the association between project site disturbance and downstream fish habitat, resulting short-term fine sediment pulses may adversely affect the survival of some fish life stages.

Forest management. Forest management includes all activities associated with the access, removal, and re-establishment of forest vegetation, including road construction, timber harvest site preparation, planting, and intermediate silvicultural treatments. The effects of timber harvest and forest roads on salmonids and their habitat have been documented in Meehan (1991), Spence et al. (1996), USDC (1997a), and USDC (1997b). Timber harvest has the potential to reduce streamside canopy levels which may result in increased stream temperatures and reduce the supply of large woody debris; alter stream flow regime; and accelerate surface erosion and mass wasting causing increased sediment delivery and turbidity in streams.

However, the literature reviews relate the results of studies of timber harvest activities not designed in the context of the NWFP. Many of the studies referenced are based upon regeneration cuts on 50 to 90 percent or greater of the land area in watersheds in short time frames, with relatively narrow riparian buffers. These circumstances are not typical of NWFP timber harvest actions.

Timber harvest and road construction activities in the NWFP area are designed to comply with Standards and Guidelines in applicable RMPs, are focused primarily in the Matrix land allocation upslope from wide Riparian Reserves, and have limited entry into Riparian Reserves. Unstable land areas prone to mass wasting are identified in WA and during NEPA analyses and often are added to Riparian Reserve no-harvest buffers or simply avoided and not logged. "Riparian Reserve widths on all permanently-flowing streams are wide enough to provide a full array of ecological functions by including the floodplain, inner gorges, and unstable and potentially unstable lands within the reserves." (FSEIS, Vol. 1, p. 3&4-68). The limited new road construction that takes place for timber sales in the NWFP area avoids connecting new road segments to stream channels to the extent possible, and often obliterates new temporary road segments in the same dry season as when they are constructed.

The design, location and timing of federal timber sales planned in accordance with the NWFP and its ACS, as well as other laws and management direction, will minimize the potential to: 1) Reduce stream shade canopy to the extent that water temperatures are measurably increased; 2) Reduce the supply of large wood debris; 3) Alter stream flow

regimes; and, 4) Accelerate surface erosion and mass wasting to the extent that there is increased sediment delivery and turbidity in streams.

S&Gs for Key Watersheds do not allow timber harvest to occur until watershed analyses have been completed ((USDA and USDI 1994b), p C-7). S&Gs for Riparian Reserves allow salvage after catastrophic events, other silvicultural practices, and firewood cutting only in circumstances where those actions are needed to attain ACS objectives ((USDA and USDI 1994b), p C-32). Salvaging of trees is only allowed when WA determines that present and future coarse woody debris needs are met and other ACS objectives are not adversely affected ((USDA and USDI 1994b), p C-32).

For purposes of this analysis, it is assumed that implementation will occur at the rate and scale projected when the original ROD was signed in 1994, keeping in mind that the PSQ was reduced by approximately 19% beginning in 2001 (Figure 4). Hence, with adjustments, a scheduled timber harvest program, including regeneration harvest, of about 805 mmbf can be anticipated.

If implementation of Preferred Alternative A results in increased vegetation management and watershed restoration activities, the potential for negative short-term, site-level impacts would increase proportionately to the amount of work implemented. Predicted effects are described in the NWFP FSEIS. Federal land managers evaluate these effects project-by-project and cumulatively, and include mitigation measures to reduce the risk of adverse effects from projects. These potential effects are also evaluated at a programmatic level within RMPs.

The extent to which these potential environmental impacts may rise to the level of a “May Affect, Likely to Adversely Affect” determination for ESA-listed fish species, is dependent upon specific site and watershed characteristics for a proposed action and the design of the action itself. This will be determined in project-level Section 7 consultations. Not all environmental impacts result in adverse effects to ESA-listed species or their designated critical habitat.

West of the Cascade Range, harvest will not occur in Late-Successional Reserves in stands that are over 80 years of age (110 years in the Northern Coast Adaptive Management Area) ((USDA and USDI 1994b), p. C-12). East of the Cascades and in the Oregon and California Klamath Provinces, additional management activities are allowed in Late-Successional Reserves to reduce risks of large-scale disturbance, such as fire. “Silvicultural activities aimed at reducing risk shall focus on younger stands in Late-Successional Reserves.” ((USDA and USDI 1994b), p. C-13). “While risk-reduction efforts should generally be focused on young stands, activities in older stands may be appropriate if: (1) the proposed management activities will result in greater assurance of long-term maintenance of habitat, (2) the activities are clearly needed to reduce risks, and (3) the activities will not prevent the Late-Successional Reserves from playing an effective role in the objectives for which they were established.” ((USDA and USDI 1994b), p. C-13).

No scheduled timber harvest will occur in Riparian Reserves ((USDA and USDI 1994b), TM-1, p. C-31) and in Matrix lands where there is little late-successional forest remaining. However, some timber volume is anticipated to be produced by thinning actions within Riparian Reserves, Late Successional Reserves, and other NWFP non-timber base lands for watershed and terrestrial restoration purposes (accelerating late-successional characteristics) and for research and adaptive management purposes. Late-successional patches should be retained in fifth field watersheds where the federal forest lands are currently comprised of 15% or less late-successional forest ((USDA and USDI 1994b), p. C-44).

The construction, use and maintenance of forest roads have been shown to be a primary source of sediment impacts in developed watersheds. Roads can alter both subsurface and surface water flows which, in turn, may alter both peak and base stream flows (USDC 1997a, Jones and Grant 1996). However, road construction in recent years has been much reduced, and road segments are usually constructed without hydrologic connectivity to stream channels. The effects of road construction are reduced by the S&Gs. No new roads should be built in Roadless Areas in Key Watersheds, and outside of Roadless Areas there should be a reduction in road mileage or, if there is inadequate funding to reduce mileage, there should be no net increase in mileage ((USDA and USDI 1994b), p C-7). Implementation monitoring reports have identified reductions in road mileages within Key watersheds (Table 11 and Table 12). A more detailed description of status of road mileage within Key Watersheds is found in the Key Watershed section earlier in this document. S&Gs for road management in Riparian Reserves are identified in the ROD (RF-1 to RF-7; p. C-32, 33) (USDA and USDI 1994b).

In summary, analysis of the proposed ACS amendment assumes that scheduled timber harvest will increase above levels of recent years, but will remain less than the Probable Sale Quantity (PSQ) evaluated in the 1994 ROD (958 to 805 mmbf). There is an anticipated concomitant increase in watershed restoration activities. When conducting forest management and watershed restoration activities, there may be an increase in the potential for short-term adverse affects to ESA-listed fish species, but these effects are still within the original scope analyzed in earlier plan-level ESA consultations. There is also the potential for an increase in long-term benefits since restoration will be implemented at levels originally described in the NWFP.

Plantation maintenance and release. Plantation maintenance and release practices generally have little immediate impact on aquatic resources (USDI 1989) and in the long-term should be beneficial as the remaining trees grow more quickly to a larger size. The effects of fertilization and chemical treatments to control competing vegetation are discussed in Meehan (1991) and Spence et al. (1996). S&Gs for silvicultural treatments in Riparian Reserves are identified in the ROD (TM-1, p. C-31; RA-3, p. C-37) (USDA and USDI 1994b).

Recreation. Recreation use can affect salmonid habitat in several ways: 1) upland changes in soils and vegetation that may affect runoff and erosion, 2) riparian changes that influence erosion, cover, food resources, and water quality, and 3) instream changes

that affect stream morphology, water quality, streamflow, substrate and debris. Direct recreational effects on fish occur primarily through angling (a use that is not funded, authorized or issued permits under BLM or FS authorities). Campground and trail maintenance and construction may increase access to fish habitats and affect the distribution of recreational use Meehan (1991). S&Gs for recreation management in Riparian Reserves are identified in the ROD (RM-1, RM-2, p. C-34) (USDA and USDI 1994b). Additionally, the S&Gs for recreation uses and developments in Late-Successional Reserves afford additional protections to watersheds ((USDA and USDI 1994b), p. C-17, 18). In summary, there is the potential for adverse affects to ESA-listed fish species by recreation activities.

Livestock grazing. The potential effects of livestock grazing on salmonids and their habitats are discussed in Meehan (1991), Spence et al. (1996), Chaney et al. (1990), and Clary and Webster (1989). Livestock grazing can have both acute and chronic effects. Acute effects are those which contribute to the immediate loss of incubating embryos and/or fish and loss of specific habitat features or localized reductions in habitat quality. Chronic effects are those which, over time, result in widespread reductions in habitat quantity and/or quality or loss of entire fish populations (for further discussion see Meehan (1991) and USDC (1997b). S&Gs for grazing management in Riparian Reserves are identified in the ROD (GM-1, GM-2, GM-3, p. C-33, 34) (USDA and USDI 1994b). "Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy Objectives. If adjusting practices is not effective, eliminate grazing." (GM-1, p. C-33). These three S&Gs are subject to the analysis process described in the ACS FSEIS for RR S&Gs that reference ACS objectives (Section 6.1.1.1 (ACS components, 1) Riparian Reserves).

Mining. The potential effects of mining activities on salmonids and their habitats are discussed in Meehan (1991), Spence et al. (1996), and USDC (1997b). Potential effects include chemical contamination of water, direct disturbance by operating within stream channels, physical alteration of stream banks and streambeds, loss of riparian vegetation from excavation, and sediment and flow consequences from road construction and development of road networks. Consistent with mining regulations, S&Gs in the ROD (MM-1 to MM-6, p.C-34-35) are used to reduce impacts of mining operations in Riparian Reserves (USDA and USDI 1994b).

Riparian silviculture. Riparian silvicultural treatments include planting conifer trees in riparian areas dominated by hardwood and brush species. Small openings may need to be created in both the overstory and understory vegetation to allow the conifers to grow. There is a slight potential for fine sediments to get into streams from disturbances in these openings as well as a slight potential for increased air temperatures in the riparian area which may affect water temperatures. In the long-term, planted conifers should provide a source for large woody debris.

Surveys. The primary effect of conducting surveys in or near stream channels is disturbance to adult and/or juvenile fish and a potential for trampling on incubating

embryos in the gravels. Sampling techniques like smolt traps and electro-fishing may result in injury or death to individual fish. Falling and topping of wildlife trees may have slight effects on the long-term input of large wood into channels.

Wildfire suppression. Ground disturbing activities associated with the suppression of wildfire may result in an increase in sediment delivery to streams. The use of chemical fire retardants is important for the suppression of wildfires. The effects of fire retardants on salmonids are discussed in Meehan (1991) and Spence et al. (1996). The use of prescribed fire may result in an increase of nutrients and fine sediment in to streams (Spence 1996), and there is a potential for prescribed fire to kill streamside vegetation. The construction and use of pump chases has the potential to deliver fine sediment and chemicals (oil and gasoline) into streams, and the use of unscreened pump equipment has a slight potential to kill fish. S&Gs for fuels and wildfire management in Riparian Reserves are identified in the ROD (FM-1 to FM-5, RA-4, p. C-35 to C-37) (USDA and USDI 1994b).

Land exchanges and acquisitions. Land exchanges and acquisitions have no direct impact on salmonids or their habitat. The newly acquired federal lands will be managed under the land allocations and S&Gs of the NWFP which will likely provide greater protections for salmonid habitat on these lands than if they had remained in non-federal ownership. However, acquisitions, exchanges and conservation easements should be used to meet ACS objectives and facilitate the restoration of fish stocks (USDA and USDI 1994b), LH-5, p. C-37). Conversely, federal lands which are exchanged will likely be managed with fewer protections to fish habitat than if they had remained in federal ownership.

Special forest products. The harvesting of special forest products, i.e., mushrooms, mosses, etc., generally would have no effect on salmonids or their habitats. However, the role these species play in riparian forests is poorly understood. One forest product, firewood cutting, has the potential to reduce large woody debris in riparian areas. However, S&Gs only allow firewood cutting when those activities are needed to attain ACS objectives (USDA and USDI 1994b at C-32).

Special use permits. The effects of kinds of activities which are authorized under special use permits are highly variable due to the range of disturbance associated with the individual actions. Spence et al (1996) discuss the effects of hydropower projects and water withdrawal projects. Power line and utility corridors have the potential to increase sediment delivery, reduce the input of large woody debris, and may be sources of chemical contamination (herbicides) to streams. Hauling on federal roads (road use permits) and construction of roads under right-of-ways can increase the delivery of fine sediments from roads into streams (Meehan 1991 and Spence et al. 1996). S&Gs for the management of special use activities in Riparian Reserves are identified in the ROD (LH-1 to LH-3, LH-4, RA-1, p. C-36, 37) (USDA and USDI 1994b).

Three Additional Areas with Special Circumstances

Mendocino NF

Since the ACS applies to the Red Bluff Recreation Area, the effects of the Preferred Alternative (Alternative A) should be similar to those described above. The most intensive use of the area that could affect listed salmonid species occurs during occasional boat races and water skiing events. Consultation with NOAAF on the special use permit for these events determined that the activities were LAA but not likely to jeopardize the continued existence of Sacramento River winter-run chinook salmon, Central Valley spring-run chinook salmon, and Central Valley steelhead ESUs (USDC 2000a). Terms and conditions issued with the BO included monitoring requirements for detection of incidental take and adverse modification to designated critical habitat. Historic and recent data collected for 3 years indicated that the events have not had a significant detectable effect on the movement or distribution of adult or juvenile salmonids within the area over the years. NOAAF recently amended its BO by removing the monitoring requirements in a letter dated 4-14-2003(USDC 2003).

Wenatchee NF

The Wenatchee NF has been and will continue to use the NWFP ACS, specifically the S&Gs for the Riparian Reserves and WA, to guide management of areas outside the NWFP area. Since these lands are very dry and have no habitat for the listed fish species, it is unlikely that other components of the NWFP such as Key Watershed designation would be applied to these lands. The restoration component of the NWFP applies to these areas but generally such activities would be a low priority unless it indirectly contributed to the restoration of Key Watersheds designated by the NWFP or the conservation of listed fish species.

BAs using the Matrix of Pathways and Indicators for anadromous fish and/or bull trout have been completed for all project level actions. Most activities have been determined to have no affect to any of the listed species but a few actions have been determined to may affect but not likely to adversely affect the listed fish species. All actions in these areas potentially affecting the listed species will continue to be assessed by the Forest and reviewed by the interagency level 1 teams.

Coquille Forest

When legislation in 1996 created the new Coquille Forest it included a requirement that management of the Coquille Forest lands will be subject to the standards and guidelines of Federal Forest plans on adjacent or nearby Federal lands, now and in the future. The adjacent Federal lands are Coos Bay BLM District lands. The effects of continued implementation of the Coos Bay District RMP, which incorporates the Northwest Forest Plan and the ACS, on Oregon coast coho salmon were described in a BA in 1997 (USDA

and USDI 1997). The analysis in that BA included the land area encompassed by the Coquille Forest. The BO regarding the effects of the Coos Bay RMP on listed Oregon coast coho salmon concluded non-jeopardy (USDC 1997b). The effects of the proposed ACS amendment and continued implementation of the Coos Bay District RMP under the proposed ACS amendment on Oregon coast coho are described in Section 6.1. Because the Coquille Forest will be managed subject to standards and guidelines of Federal Forest plans on adjacent or nearby Federal lands, the descriptions of effects and conclusions of effect on listed Oregon coast coho salmon for the Coquille Forest are identical to those for the Coos Bay District RMP.

Effects to Designated or Proposed Critical Habitat

The effects of the continued implementation of the RMPs as amended by the proposed ACS amendment to the designated or proposed critical habitat are described and analyzed in detail for critical habitat not previously addressed in biological opinions for the RMPs. Designated or proposed critical habitat are identified by administrative unit and species in Table 2. Designated critical habitat for the Central California Coast and Southern Oregon/Northern California Coast coho salmon ESUs was previously assessed and addressed by NOAAF BOs and are hereby incorporated by reference (USDC 1999, USDC 2001). Effects common to all critical habitat are discussed in section 6.2.1. Effects specific to the proposed critical habitat for the Columbia River and Klamath River bull trout DPSs are discussed in section 6.2.2. Critical Habitat has been designated for 6 anadromous fish ESUs (Table 1) and are primarily addressed in the "Effects Common to all Critical Habitat" section rather than individually in section 6.2.3.

Effects Common to All Critical Habitat

The NWFP ACS was designed to incorporate all elements of the aquatic and riparian ecosystem necessary to maintain the natural disturbance regime. These elements include maintenance of hydrologic function, high water quality, adequate amounts of coarse woody debris, complex stream channels that provide a diversity of aquatic habitats types, and riparian areas with suitable microclimate and vegetation. The ACS created a connected system of aquatic and riparian habitats throughout the NWFP area. The ACS, in particular the Riparian Reserves, has reversed the trend of aquatic and riparian habitat degradation and began the recovery of these habitats.

The FSEIS for the NWFP described attributes important to aquatic ecosystems (USDA and USDI, 1994a). A description of the function of habitat components, hydrology, water quality, riparian and coarse woody debris are discussed in detail on pages 51-63 of chapters 3 and 4. The FEIS assessment did not explicitly rate the abundance and ecological diversity of habitat, ecosystem processes and functions and the connectivity of the aquatic habitat. It did consider ecosystem processes and functions represented by the Riparian Reserve widths, Key watersheds and watershed restoration. Connectivity

represented by Riparian Reserves and supported by the other adjacent land allocations was considered as well.

The proposed or designated adfluvial or fluvial critical habitat on FS and BLM lands lies entirely within the Riparian Reserve land allocation. The Riparian Reserve prescription for reservoirs, lakes and fish bearing streams is:

Constructed ponds and reservoirs, and wetlands greater than 1 acre - Riparian Reserves consist of the body of water or wetland and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.

Lakes and natural ponds - Riparian Reserves consist of the body of water and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest.

Fish-bearing streams - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest.

The Riparian Reserve prescription for fish bearing streams, which are the most protective for streams, would apply to all fluvial critical habitat. Given this prescription for fish bearing streams, the minimum width of the Riparian Reserves would be 300 feet slope distance (600 feet total, including both sides of the critical habitat) which is inclusive of all designated or proposed critical habitat considered in this BA. In most NWFP provinces, it would be wider than the 300 feet due to the other criteria used to define the appropriate Riparian Reserve prescription.

Under the ACS, a project cannot have a negative impact, in the long term, on riparian-dependent resources or ecological processes in the Riparian Reserves at the watershed scale. Each project must maintain or restore the physical and biological processes required by riparian dependent-resources at the watershed scale or broader to comply with the ACS. S&Gs prohibit and regulate activities in Riparian Reserves that retard or prevent attainment of the ACS objectives. The ACS objectives address all of the physical and biological features that are essential to the conservation of bull trout (e.g. primary constituent elements) or anadromous fish (e.g. essential features) (Table 19).

The potential, site-specific effects from the continued implementation of the RMPs on the critical habitats will be evaluated in second level project analyses at the time such actions are proposed. Table 19. The NWFP ACS objectives addressing the physical and

biological features of Primary Constituent Elements and Essential Features of Critical Habitat.

Generic Category of Physical and Biological Features of Primary Constituent Elements and Essential Features of Critical Habitat	Primary Constituent Elements or Essential Features of Critical Habitat			Aquatic Conservation Strategy Objectives
	Bull Trout DPSs	Snake River Salmon ESUs	Sacramento River Winter-run Chinook ESU	
Water Quantity	1, 5, 6, 7	3, 9	3, 7	1, 3, 4, 5, 6, 7, 8, 9
Water Temperature	2, 7	4, 8	4	2, 4, 8, 9
Cover/Shelter	3	6, 8, 10	5, 6	1, 3, 5, 6, 8, 9
Substrate	4	1	2	1, 2, 4, 5, 6, 9
Natural Hydrograph	5	5	3, 7	2, 3, 4, 5, 6, 7, 9
Water Quality	1, 4, 5, 6	2	2, 5	1, 3, 4, 6, 7, 9
Migratory Corridor/ Safe Passage Conditions	7	10	1, 7	1, 2, 3, 4, 6, 8, 9
Food/Prey	8	7	5, 6	1, 4, 6, 8, 9
Water Velocity	3	5	3, 7	2, 3, 4, 5, 6, 7, 9
Riparian Vegetation	Not Applicable	8	6	1, 2, 3, 4, 5, 6, 8, 9
Space	1, 3, 4	3	3, 6	1, 3, 4, 5, 6, 7, 8, 9
Predation/Competition/Interbreeding	9	10	4, 7	1, 4, 9

There is an ESA consultation and conference requirement with USFWS or NOAAF to ensure that actions the FS or BLM authorize, fund, or carry out do not adversely modify critical habitat. Currently, the FWS and/or NOAAF Matrix of Pathways and Indicators is used in every 7(a)(2) consultation to assess the effects of a proposed action on habitat important to listed fish species. The habitat indicators in the Matrix of Pathways and Indicators are nearly identical to the physical and biological features addressed by the PCEs and essential features of critical habitat. Although, some PCEs and essential features are not directly identified in the "Matrices," they are indirectly addressed by the existing indicators. All of the PCEs or essential features have been and will continue to be indirectly or directly assessed using the "Matrices" or alternative analysis tools such as the draft "Analytical Process for Development of Biological Assessments for Consultation on Federal Actions Affecting Fish Proposed or Listed under the Endangered Species Act within the Northwest Forest Plan Area" being developed by a federal interagency team, in consultations on the listed species.

The NWFP ACS provides special management to assure the PCEs and essential features of proposed or designated critical habitat are maintained or restored. Land management

activities such as timber harvest, livestock grazing, road construction, barriers associated with roads, restoration and mining require special management that is provided by the ACS. It is discussed previously in this section of the BA as well as the Effects section (subsections 6.1.1.1 and 6.1.1.2) for the species that addresses all of the ACS components and the S&Gs associated with the aforementioned land management activities.

Proposed Critical Habitat for Bull Trout

Section 7 of the ESA prohibits actions funded, authorized, or carried out by Federal agencies from jeopardizing the continued existence of a listed species or destroying or adversely modifying the listed species' critical habitat. Actions likely to "jeopardize the continued existence" of a species are those that would appreciably reduce the likelihood of the species' survival and recovery (50 CFR 402.02). Actions likely to "destroy or adversely modify" critical habitat are those that would appreciably reduce the value of critical habitat for the survival and recovery of the listed species (50 CFR 402.02). Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Given the similarity of these definitions, actions likely to destroy or adversely modify critical habitat would almost always result in jeopardy to the species concerned when the habitat is occupied by the species. Since the consultation regarding the effects of the RMPs on listed bull trout was non-jeopardy (USDI 2000) within the NWFP area, we can conclude the RMPs are not likely to destroy or adversely modify proposed critical habitat when occupied by bull trout. Additional analysis of the unoccupied habitat would be needed to draw a conclusion for proposed critical habitat in its entirety.

In the FWS BO for the RMPs (USDI 2000), the analysis of the RMP effects on the bull trout included where bull trout occurred both presently and historically. The non-jeopardy conclusion didn't include the unoccupied habitat for bull trout, but the effects analysis addressed all habitat whether occupied or not. The proposed critical habitat for the Columbia and Klamath River bull trout DPSs within the NWFP area is a subset of the occupied and unoccupied habitat analyzed in the BO for the RMPs. Given the similarity of definitions discussed above and an analysis of RMP effects on the species that included both occupied and unoccupied habitat, we can conclude that the analysis and conclusions of the BO for the species will be similar for the proposed critical habitat.

The BO for the NWFP RMPs (USDI 2000) analyzed the effects from land allocations adjacent to Riparian Reserves. The FWS assessed the risk of adverse effects from upland land allocations on habitat presently and formerly occupied by bull trout. Although the entire present and historical distribution of bull trout is within the protective Riparian Reserve land allocation, some moderate risks of indirect adverse effects were identified for actions occurring in upland areas. The FEMAT report (USDA et al. 1993) and the FWS BO for the for alternative 9 (the selected alternative) of the Final Supplemental Impact Statement on *Management of Habitat for Late-Successional and Old Growth Forest related Species within the Range of the Northern Spotted Owl* (USDA and USDI 1994a) portray these risks differently.

The risk ratings of the upland land allocations in the BO do not fully account for the protections associated with the LSRs and the Riparian Reserves, which overlay all land allocations. Certain upland land allocations (LSRs, Managed LSRs in or outside Key Watersheds, AMA, and Matrix) were all rated as having a moderate risk to bull trout habitat and populations. The term "moderate" implies there is more than a minimal risk to fish habitat and bull trout populations from Federal land management activities in the NWFP area. Given the protective measures of the ACS and that upland land allocations are not adjacent to fish habitat, the effects from land management activities in these land allocations including Matrix to bull trout habitat should be fairly low. The BO assigns the same level of risk to LSRs as to Matrix lands, which fails to acknowledge the fundamental difference in objectives, restrictive S&Gs, and level of management activities allowed in the LSRs. The FEMAT report indicated a very low risk to bull trout from the implementation of the NWFP, and on page V-32, recognized the LSRs as relatively undisturbed areas that are an important component of the ACS even though they were not derived as such (USDA et al. 1993).

The FWS BO (USDI 1994) for alternative 9 (the selected alternative) of the Final Supplemental Impact Statement on *Management of Habitat for Late-Successional and Old Growth Forest related Species within the Range of the Northern Spotted Owl* (USDA and USDI 1994a) addressed effects to the listed Lost River and shortnose suckers and partially supports the above conclusion. It analyzed how the ACS components, objectives, land allocations and standard and guidelines generally affected the fish habitat and species. It concluded that the ACS riparian reserves in combination with other land allocation reserves "would provide a high level of protection for all streams in them." The conclusion was, "... based on the assumption that following watershed analysis, the boundaries of Riparian Reserves, particularly in intermittent streams, could change and some management actions would be allowed within them. However, it was also assumed that watershed analysis would not always reduce the final riparian reserve boundaries and that management activities allowed within them would be limited to activities designed to achieve riparian and aquatic habitat objectives."

Furthermore, the BO stated, "Several causes for the decline of Lost River and shortnose suckers are addressed by the preferred alternative. They are insularization of habitat and water quality problems associated with timber harvest, removal of riparian vegetation, and livestock grazing. Riparian Reserves in combination with other Reserves such as CRAs and LSRs provide a high level of protection for all streams in them. This in turn provides the ecological functions and processes required for the amelioration of these causes and thus the creation and maintenance of fish habitat. Additionally, streams in reserves could serve as cores of good habitat. The core areas would serve as refugia and population centers for recolonization as degraded areas recovered in the future." The threats discussed for the suckers are also two of the primary threats to bull trout. It is reasonable to assume the FWS conclusions regarding the NWFP ACS, its benefits to fish habitat and recovery of the suckers, would apply to other inland fish habitat and species such as bull trout.

The NWFP land allocations in the RMPs indirectly provide protection for bull trout and critical habitat since the majority of the FS and BLM lands pose a low or no potential for adverse effects. The FWS bull trout BO for the RMPs (USDI 2000) identified the following land allocations as low or no risk to bull trout: Congressionally Reserved, Administratively Withdrawn, and LSRs in Key Watersheds. These three land allocation areas encompass 64%, 77% and 84% of the occupied habitat for the Columbia, Klamath and Puget Sound/WA Coast bull trout DPSs, respectively (USDI 2000). Regarding unoccupied habitat for the Columbia and Klamath bull trout DPSs, these land allocation areas encompass 58% and 80% of the area, respectively (USDI 2000). All other land allocations were identified as a moderate potential for adverse effects except for Riparian Reserves. However, the BO doesn't account for the Riparian Reserves of those land allocations since the Riparian Reserves were not mapped for the NWFP FSEIS.

The Riparian Reserves land allocation was determined for the NWFP FEIS through a series of samples in the NWFP provincial areas (USDA and USDI, 1994a). These samples were taken only in the Matrix land allocation area and resulted in an estimated 39% of the NWFP Matrix lands being comprised of Riparian Reserves. Using this series of samples, it is estimated the other NWFP land allocations within the Olympic Peninsula, WA Western Cascades, OR Western Cascades, WA Eastern Cascades and OR Eastern Cascades physiographic provinces are comprised of an average of 46%, 35%, 27%, 31%, and 15% Riparian Reserves, respectively (USDA and USDI 1999). However, FS and BLM analyses of Riparian Reserve land allocations have determined the NWFP FEIS underestimated the Riparian Reserve area of some provinces, especially the OR and WA Coastal areas, by as much as 74 % (USDA and USDI 1999, USDA and USDI 1997a, USDA and USDI 1997b). Accounting for the riparian reserve area of the land allocations in the FWS BO would substantially reduce the FS and BLM land area posing a potential moderate risk to bull trout and proposed critical habitat.

Critical Habitat for Anadromous Fish ESUs

The effects of RMPs on critical habitat for six anadromous fish ESUs (Sacramento River winter-run chinook salmon; Snake River fall-run chinook; Snake River spring/summer-run chinook; Snake River sockeye salmon; Southern Oregon/Northern California Coast coho salmon; and Central California Coast coho salmon) considered in this BA are addressed two ways. First, although the effects of the RMPs on the critical habitat for the Southern Oregon/Northern California Coast and Central California Coast coho salmon ESUs would be adequately addressed in section 6.2.1 in this BA, those effects were previously addressed in consultations with NOAAF (Table 3). The analysis and conclusions of those two BOs are hereby incorporated by reference (USDC 1999, USDC 2001) and no additional analysis is conducted herein. Second, the RMPs effects on the critical habitat of the remaining four ESUs had not been previously analyzed and are addressed in the effects common to all critical habitat (section 6.2.1) of this BA.

CUMULATIVE EFFECTS

The States within the range of the NWFP have developed, or are engaged in developing, conservation plans or strategies for the listed salmonid species. The federal NWFP ACS effort has been boosted by the Oregon and Washington State efforts to protect and recover habitat important to the at-risk fish species on nonfederal land. Companion aquatic conservation strategies for nonfederal lands are necessary to accompany the federal NWFP ACS to significantly accrue benefits for ensuring the viability of fish species and increase the likelihood of NWFP ACS success (USDA et. al. 1993). The States of Oregon and Washington have developed Salmon Recovery Strategies but the Oregon State strategy is more comprehensive since it applies to all wild salmonid species.

Oregon. The State of Oregon developed a comprehensive aquatic conservation strategy (The Oregon Plan) with components complementary to the NWFP ACS: In 1997 the Oregon Coastal Salmon Restoration Initiative was renamed the Oregon Plan for Salmon and Watersheds and was broadened to steelhead populations of the Oregon coast and Lower Columbia including Willamette River. On January 14, 1999, Governor Kitzhaber expanded the Oregon Plan for Salmon and Watersheds (Oregon 1997) to include all at-risk wild salmonids throughout the State. This Executive Order provides the framework and direction for state agencies to implement, to the extent of their authorities, the Oregon Plan in a timely and effective manner.

The goal of the Oregon Plan is to "restore populations and fisheries to productive and sustainable levels that will provide substantial environmental, cultural, and economic benefits." Components of this plan include (1) coordination of efforts by all parties, (2) development of action plans with relevance and ownership at the local level, (3) monitoring progress, and (4) making appropriate corrective changes in the future. This process included chartering 84 locally-formed and represented "watershed councils" across the State. Membership on the watershed councils includes: landowners, businesses interests, agricultural interests, sport fishers, irrigation/water districts, individuals, State, Federal, and Tribal agencies, and local government officials.

Since 1990, the State of Oregon has taken several actions to address the conservation and recovery of bull trout. Initially, working groups were established that consisted primarily of State, Federal, and private individuals with bull trout expertise. After gathering initial information, membership on the working groups was expanded when the Oregon Department of Fish and Wildlife bull trout coordinator was hired in 1995, and included a range of people representing affected interests. Information on watershed conditions prepared by local councils and working groups has been applied to developing bull trout recovery unit chapters in Oregon.

More restrictive harvest regulations were implemented beginning in 1990; by 1994 the harvest of bull trout was prohibited throughout the State with the sole exception of Lake Billy Chinook in central Oregon. Bull trout working groups have been established in the Klamath, Deschutes, Hood, Willamette, Odell Lake, Umatilla and Walla Walla, John

Day, Malheur, and Pine Creek river basins for the purpose of developing bull trout conservation strategies. The Oregon Department of Fish and Wildlife reduced the stocking of hatchery-reared rainbow trout and brook trout in areas where bull trout occur, and genetic analysis for most bull trout populations was completed in 1997. Angler outreach and education efforts were also implemented in river basins with bull trout. Bull trout identification posters were placed at various campgrounds and trail heads, and bull trout identification cards were produced for distribution by the Malheur National Forest and the Oregon Department of Fish and Wildlife. Research to examine life history, genetics, habitat needs, and limiting factors of bull trout in Oregon was initiated in 1995, supported by funding from the Fish and Wildlife Program of the Northwest Power Planning Council. In 1998, a project was initiated to transfer bull trout fry from the McKenzie River watershed to the adjacent Middle Fork Willamette River, which is historical unoccupied, isolated habitat. Recent surveys documented several age classes of bull trout at release sites in the Middle Fork Willamette River.

The Oregon Department of Environmental Quality sets standards for water quality and administers Oregon's water quality program. Surface water temperatures may not exceed 10.0 degrees Celsius (50.0 degrees Fahrenheit) in waters that support or are necessary to maintain the viability of bull trout (Oregon 1996).

Washington. Washington State has developed a salmon restoration strategy while the State legislature and agencies have taken progressive actions to protect and recover at-risk fish populations and habitat. The draft Statewide Strategy to Recover Salmon, Extinction is not an Option, was produced by the Washington Governor's Salmon Recovery Office (Washington Governor's Salmon Recovery Office 1999) and Joint Natural Resources Cabinet. The plan describes how State agencies and local governments will work together to address habitat, harvest, hatcheries, and hydropower as they relate to recovery of listed species. While the Washington Governor's plan focuses primarily on salmon, many of the same factors affecting salmon also impact bull trout.

Overall goals and strategies identified in the State salmon recovery strategy for restoring healthy populations of salmon are consistent with actions needed for bull trout recovery. Therefore, it served as the template for recovery unit chapters in the Washington portion of the bull trout recovery plan. In addition, the Washington Department of Fish and Wildlife prepared the Washington State Salmonid Inventory for Bull Trout/Dolly Varden (WDFW 1998) and the Bull Trout and Dolly Varden Management Plan (WDFW 2000) which the bull trout recovery teams considered in the development of the draft recovery plan for the Columbia River bull trout DPS.

The Washington State legislature established the Salmon Recovery Act (ESHB 2496) and Watershed Management Act (ESHB 2514) to assist in salmon recovery efforts. The Watershed Management Act provided funding and a planning framework for locally based watershed management addressing water quality and quantity. The Salmon Recovery Act provides the direction for the development of limiting factors analyses on salmon habitat and creates a list of prioritized restoration projects at the major watershed

level. While not specifically targeting limiting factors for bull trout, these documents have played an important role in the development of bull trout recovery unit chapters.

The Washington Department of Fish and Wildlife no longer stocks brook trout in streams or lakes connected to bull trout waters. Fishing regulations prohibit harvest of bull trout, except for a few areas where stocks are considered "healthy," within the State. The Washington Department of Fish and Wildlife is also currently involved in a mapping effort to update bull trout distribution data within the State of Washington, including all known occurrences, spawning and rearing areas, and potential habitats. The salmon and steelhead inventory and assessment program is currently updating their database to include the entire State, which consists of an inventory of stream reaches and associated habitat parameters important for the recovery of salmonid species and bull trout.

In January 2000, the Washington Forest Practices Board (2000) adopted new emergency forest practice rules based on the "Forest and Fish Report" development process. These rules address riparian areas, roads, steep slopes, and other elements of forest practices on non-Federal lands. Although some provisions of forest practice rules represent improvements over previous regulations, the plan relies on an adaptive management program for assurance that the new rules will meet the conservation needs of bull trout. Research and monitoring being conducted to address areas of uncertainty for bull trout include protocols for detection of bull trout, habitat suitability, forestry effects on groundwater, field methods or models to identify areas influenced by groundwater, and forest practices influencing cold water temperatures. The Forest and Fish Report development process relied on broad stakeholder involvement and included State agencies, counties, Tribes, forest industry and environmental groups. A similar process is also being used for agricultural communities in Washington and is known as "Agriculture, Fish, and Water."

California. Since implementation of the NWFP and its ACS began on federal lands nearly 10 years ago, California State and local agencies and other groups have been involved in many aspects of salmon and steelhead conservation and recovery. California Department of Fish and Game (CDFG) completed a Steelhead Restoration and Management Plan in 1996 (CDFG 1996) and has recently completed coho salmon status reviews in response to listing petitions under the California ESA. These status reviews have set the stage for salmon recovery, and include data regarding current baseline, reasons for decline, and extinction risk for nearly all anadromous salmonids in California.

Sport and commercial salmon harvest regulations under the CDFG have changed significantly since 1994, with emphasis on increasing salmon spawning recruitment, reducing habitat disturbance, and increasing juvenile-to-smolt survival rates. Most anadromous systems are closed to fishing during April and May to protect redds, newly emerged larvae, and emigrant juveniles. Also, most tributaries of anadromous rivers are either closed to angling year-round, or have catch-and-release restrictions, to further protect salmon during their freshwater phase. Bait restrictions in most rivers include single barbless hooks for catch and release and uses and origins of roe.

During the completion of status reviews and the statewide Steelhead Restoration and Management Plan, NOAAAF and CDFG entered into an MOU that included new guidelines for operating salmon and steelhead hatcheries. These new practices are aimed at protection of genetic diversity, significantly reducing the potential for hatchery/wild spawning interactions, maintaining wild populations in light of angling pressure, and preventing further “domestication” of remaining wild stocks. The MOU includes restrictions on timing and location of releases, addresses problems with “outplantings”, disease transfer from hatcheries to wild populations, and hatchery fish marking practices. The new practices outlined in the MOU are based on findings from current conservation genetics research.

Many groups have contributed to watershed restoration and salmon recovery efforts in California. Large grant programs sponsored by CALFED Bay-Delta Program and CDFG have funded watershed and fisheries restoration projects across the NWFP area. County and state transportation agencies have been working to restore fish passage on streams blocked by road culverts. California forest practice rules have been improved to provide added protection for Sensitive watersheds and require development of timber harvest plans to prevent deleterious effects to streams on private lands. CDFG is in the process of reviewing their suction dredging regulations and may change them to provide added protection for salmonids that were federally listed after the current regulations were developed. Many NWFP watersheds now have community based groups that are implementing restoration actions. Some large river basins, such as the Klamath and Trinity, have multi-agency restoration task forces.

DETERMINATION OF EFFECT

The RMPs either incorporate or were amended by the NWFP except for the CRGNSA as previously noted. The NWFP and its ACS are designed to conserve aquatic and riparian habitats and the species which are dependent on those habitats. This BA has explained the Aquatic Conservation Strategy, its component parts, its ecosystem management approach, and the conclusion of the NWFP FEMAT in predicting an 80% or greater likelihood of providing sufficient aquatic habitat to support stable, well distributed populations of salmon and trout species should the NWFP be implemented (USDA et al. 1993). The BA provides data and interpretation to strongly support the premise that the administrative units have been implementing the NWFP and its components as part of RMP implementation.

The components of the ACS are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. The components and their potential effects to ESA-listed fish species were described by component in the effects section (Section 6.1.1.1). In concert with the land allocations and S&Gs, the ACS components provide a framework to minimize or avoid adverse effects of land management actions while also restoring watershed processes and habitat characteristics so that fish populations have a high potential to be maintained over time. The goal of

conserving at-risk fish populations for the long-term was integral to development of the ACS. The network of Key Watersheds to provide refugia for fish populations was a direct outcome of that goal. The Key Watersheds have restrictive S&Gs to maintain or improve conditions suitable as refugia. The S&Gs prohibit road construction in RARE II roadless areas, reduce overall road mileage, require WA prior to all but minor activities, require WA prior to timber harvest and Key Watersheds are highest priority for watershed restoration.

The structure of the NWFP focuses the more potentially impacting land management actions such as regeneration timber sales and associated road construction in upland areas, primarily in the Matrix land allocation. Even in Matrix, ground-disturbing actions are dispersed in time and space, and projects are designed to minimize environmental impacts. In addition, the land base for such activities has been greatly reduced, with 80% or greater of the federal land within the NWFP area in some form of reserve land allocation. In the reserve land allocations, ground-disturbing actions are prohibited, reduced in size and scope, and/or designed in the context of information from the results of WA and strict S&Gs which protect riparian and/or terrestrial resources. Some of the S&Gs that are designed to conserve terrestrial resources such as wildlife indirectly benefit riparian-dependent resources by minimizing ground disturbance and the potential for soil erosion. The large proportion of federal land area in some form of reserve status also provides benefits by the process of passive restoration, where vegetation growth reduces erosion and provides shade for stream networks. Passive restoration also occurs when stream channels interact with encroaching vegetation, natural introductions of large wood debris and bedload processes to build stream banks, narrow channels, form pools, and sort and store sediments from bedload.

The expansive network of wide Riparian Reserves overlaying all other land allocations, including Matrix, benefits ESA-listed fish species and their habitat by providing buffer areas from the effects of upland land management actions as well as being sufficiently wide to maintain watershed processes. Actions that take place within the Riparian Reserves are designed with the following in mind: "Riparian Reserves are portions of watersheds where riparian-dependent resources receive primary emphasis and where special S&Gs apply (USDA and USDI 1994b, page B-12)." These S&Gs prohibit and regulate activities that retard or prevent attainment of the ACS objectives. WA must be completed before timber harvest activities can take place within Riparian Reserves, providing context for the design and potential effects of such proposed actions on riparian-dependent resources such as ESA-listed fish species. The Riparian Reserves are often the focal point for watershed restoration, to actively restore and enhance conditions suitable for long-term conservation of ESA-listed fish species.

Watershed analysis provides a basis for understanding the baseline conditions, trends, and ranges of natural variability for watershed processes and aquatic habitat conditions in the context of habitat requirements for local fish species. WA also typically provides information on the distribution of fish species and may identify important habitat areas and abundance data or trends. The results of WA provide a context for prioritizing restoration and other land management actions, and informs decisions on where, when,

and in what manner to accomplish them. As described above, WA is integrated with management for Key Watersheds and Riparian Reserves because it is required prior to doing specific types of activities.

Implementation and effectiveness monitoring in support of the NWFP ACS will determine if the land management agencies are properly applying the ACS and whether or not such implementation is resulting in anticipated conditions in watersheds. While effectiveness monitoring may not result in an understanding of trends in condition for ten or more years, an assessment of compliance with the components of the ACS and associated S&Gs is used for adaptive management purposes in the near term.

The NFP FSEIS, NFP ROD and the FEMAT report support the conclusion that the ACS components are sufficient to maintain and restore riparian and aquatic ecosystems and attain ACS objectives:

“Although Riparian Reserve boundaries may be adjusted on permanently-flowing streams, the prescribed widths are considered to approximate those necessary for attaining Aquatic Conservation Strategy objectives.” (USDA and USDI 1994b at B-13).

“The total system of withdrawn and reserved areas, along with the specified standards and guidelines, would meet the need to protect the overall ecosystem while providing for other management opportunities.” (USDA and USDI 1994a at F-62);

“The total system of Key Watersheds, along with Riparian Reserves and the specified standards and guidelines, will meet the need to protect the overall aquatic ecosystem while providing for other management opportunities.” (USDA and USDI 1994a at F-64).

“Ecological conditions and processes required for the creation and maintenance of fish habitat were provided by Riparian Reserves. The greater the amount of Riparian Reserves, the more it contributed to the ranking.” (USDA et al. at 1993 V-64).

“In all cases we assumed final Riparian Reserves would provide the necessary range of ecological functions and processes that create and maintain good fish habitat.” (USDA et al. 1993 at V-64).

Given the land allocations, the amount of land area in reserves, the distribution in time and space of actions such as regeneration timber harvest in upland areas (Matrix) which constitute 20% or less of the total land area in the NFP planning area, watershed restoration actions, and natural and facilitated growth of forest vegetation, a picture emerges for forest, riparian and aquatic conditions that will develop over time on federal lands as the NFP is implemented. Regeneration harvest in the Matrix is planned for rotations of 80 years or greater. If evenly distributed over time and space, approximately 1.25% of the federal land area in the Matrix would be disturbed in a given year in a fifth field watershed. Riparian Reserves, LSRs, congressionally withdrawn areas, and other types of reserves which constitute as much as 80% of the land area will grow towards late-successional characteristics where soil, climate conditions and infrastructure allow it.

Sediment and hydrological processes would move towards reference conditions. Fish habitat conditions would improve in concert with maturation of riparian vegetation, and reductions in sediment load and peak/base flow fluctuations. Natural disturbances such as fires, windstorms and floods may alter conditions periodically, but in the long-term, aquatic and riparian conditions would move towards reference conditions on federal lands.

In summary, the integration of the ACS components of WA, Key Watersheds, Riparian Reserves, watershed restoration, and associated S&Gs results in a management framework that minimizes or avoids the potential negative impacts of land management actions to water quality and fish habitat, while also restoring aquatic and riparian habitat conditions. This will enhance the long-term potential to sustain populations of at-risk fish species. Consequently, the ACS as a strategy and its individual components are beneficial to ESA-listed fish species and critical habitat.

The BA has explained the results of NWFP regional implementation monitoring reports which indicate a high rate of compliance with S&Gs. The monitoring reports also indicate that the administrative units are reducing road networks in Key Watersheds and elsewhere, further enhancing their value as refugia. Watershed Analysis has been conducted for nearly all of the acreage contained in Key Watersheds, and has substantially been completed in non-Key Watersheds. This has and will continue to provide relevant information to provide context for the design of activities, and where to focus restoration efforts. Watershed restoration efforts are widespread and have restored or enhanced watershed processes and habitat important for the well-being of ESA-listed fish species. There have been limited and site-specific changes to the Riparian Reserve network. Based upon the experience of several administrative units, the Riparian Reserve network actually comprises more of the landscape than originally estimated. Largely for this reason, the Probable Sale Quantity for timber harvest has been reduced. Furthermore, continued implementation and effectiveness monitoring will facilitate an adaptive management process and determine whether changes in land allocations or S&Gs are needed in the future.

A high percentage of the present distribution of ESA-listed or candidate fish species occurs in land allocations where S&Gs provide substantial protection for the species and proposed or designated critical habitat. Approximately 80% of the land area in the NWFP has some form of reserve status. This will reduce the risk of adverse effects from management activities.

Implementation of the S&Gs, land allocations, and other components of the Aquatic Conservation strategy, should result overall in improved baseline conditions over time, further reducing the frequency, magnitude and duration of adverse effects on the species and proposed or designated critical habitat.

Protective land allocations, watershed restoration activities, and improved environmental conditions should result in positive effects on the reproduction, numbers and distribution of ESA-listed or candidate species in the NWFP area over time.

Each action or programmatic category of actions proposed by the action agencies in implementing their RMPs that require ESA Section 7 consultation will continue to utilize the streamlined consultation procedures, including the use of interagency Level 1 and Level 2 teams.

As described earlier in the document, a wide variety of actions take place as the administrative units implement their RMPs. Despite the protective and restorative aspects of NWFP and ACS implementation, a sub-set of actions will nevertheless result in adverse effects to ESA-listed and candidate fish species and proposed or designated critical habitats. These adverse effects are typically short-term in nature and often associated with watershed restoration efforts. Therefore, most of the RMPs “may affect, likely to adversely effect” (LAA) the species or critical habitat specific to an RMP area as identified in Table 2. The effect determinations for the continued implementation of the individual RMPs as amended by the NWFP and Preferred Alternative A of the ACS FSEIS (USDA and USDI in press) on the following generalized categories of species or critical habitat: listed species, designated critical habitat, proposed critical habitat and/or candidate species (Table 20). The Modoc and Lassen NF are the only RMPs that have “no effect” (NE) to any of the species or critical habitat within the NWFP area as determined in this BA (Table 20).

Table 20. Determination of effect for the continued implementation of the RMPs as amended by the NWFP ACS and Preferred Alternative A of the ACS FSEIS on the following generalized categories of species or critical habitat: listed species, designated critical habitat, proposed critical habitat and/or candidate species. The actual listed species, designated critical habitat, proposed critical habitat, or candidate species specific to a RMP area, to which the effect determinations of the generalized categories apply, are listed in Table 2. The acronyms NE and LAA represent the phrases “no effect” and “may effect, likely to adversely affect”, respectively.

Administrative Unit	Effect Determination			
	Listed Species	Designated Critical Habitat	Proposed Critical Habitat	Candidate Species
Columbia River Gorge NSA	LAA	LAA	LAA	LAA
Deschutes	LAA	NE	LAA	NE
Gifford Pinchot	LAA	NE	LAA	LAA
Klamath	LAA	LAA	NE	NE
Lassen	NE	NE	NE	NE
Mendocino	LAA	LAA	NE	LAA
Modoc	NE	NE	NE	NE
Mount Baker Snoqualmie	LAA	NE	NE	LAA
Mount Hood	LAA	NE	LAA	LAA
Okanogan	LAA	NE	LAA	NE
Olympic	LAA	NE	NE	LAA
Rogue River	LAA	LAA	NE	NE
Six Rivers	LAA	LAA	NE	NE
Siskiyou	LAA	LAA	NE	LAA
Shasta-Trinity	LAA	LAA	NE	LAA
Siuslaw	LAA	NE	NE	LAA
Umpqua	LAA	NE	NE	LAA
Wenatchee	LAA	NE	LAA	NE
Willamette	LAA	NE	LAA	NE
Winema	LAA	NE	LAA	NE
Arcata	LAA	LAA	NE	NE
Coos Bay	LAA	LAA	NE	LAA
Eugene	LAA	NE	LAA	LAA
King Range NCA	LAA	LAA	NE	NE
Klamath Falls	LAA	NE	NE	NE
Medford	LAA	LAA	NE	LAA
Redding	LAA	NE	NE	LAA
Roseburg	LAA	NE	NE	LAA
Salem	LAA	NE	NE	LAA
Ukiah	LAA	LAA	NE	NE

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APPENDIX

Current Processes Used by the Action Agencies that Contribute to a Multi-Scale Understanding of Effects

Current Processes Used by the Action Agencies that Contribute to a Multi-Scale Understanding of Effects

This paper identifies the processes that the USDI Bureau of Land Management (BLM) and the USDA Forest Service (FS) use to assess and mitigate effects of actions at a variety of scales. Analysis processes and other requirements are listed below and a summary of how they interact follows.

Project NEPA Analysis

The National Environmental Policy Act (NEPA) requires full disclosure of the direct and indirect effects of federal actions, as well as public participation in the process. This process shapes project design by the requirement to evaluate alternatives for a proposed action. The ultimate design of a project is frequently influenced by comments from the public and from agencies such as the federal environmental Protection Agency, and state Fish and Wildlife agencies.

Interdisciplinary team members assess the effects of the alternatives on their particular areas of expertise. A variety of information sources are used, including Watershed Analysis (WA) (typically at the 5th field HUC scale), habitat inventory and monitoring data (such as stream surveys and data from recording thermographs), field assessments of conditions within the project area, and state and federal agency assessments of fish population distribution and population status. These information sources provide data at a variety of scales from site (important spawning areas and presence/absence for fish; sediment sources to streams, site habitat conditions), stream reach (Section 303d water quality limited stream sections) to watershed or greater (population status, extent of distribution of special status fish species). Baseline conditions are utilized in the analysis process. NEPA analyses are not at specific spatial scales; the scale is dependent upon the action area and the nature and magnitude of the potential effects. There is a requirement in NEPA to evaluate cumulative effects. Cumulative watershed effects are typically assessed using models, at scales ranging from 7th field HUCs to 5th field HUCS.

The NEPA analysis often results in the selection of mitigation measures including Best Management Practices to be applied to the action to mitigate water quality concerns. All projects must meet the implementing regulations of the Clean Water Act and other laws and regulations. Both the FS and BLM have manuals that provide direction on actions and coordination. If the project is contracted, the contract also contains a variety of clauses that mitigate for undesirable impacts. Contract inspectors and Contracting Officer's Representatives ensure the specifications and clauses are met. Forest Plans (FS) and Resource Management Plans (BLM) contain standards, designed to protect water quality, that must be met in project design and implementation.

Effects analysis in a NEPA document will indicate whether implementing a project may impact a site, and will characterize the intensity and duration of the effect. Managers must consider these effects given the existing condition of the watershed and the potential cumulative effects. Managers must also make a finding of consistency with the unit's Land and Resource Management Plan (under NFMA) or make a finding of Resource Management Plan conformance (under FLPMA). Since the ACS is either integrated into the LRMPs/RMPS or they were amended by it, this finding of consistency or conformance with the plans is a consistency finding for the ACS.

For most projects, the NEPA analysis process includes an appeal/protest stage. Appeals and protests may challenge the adequacy of analysis of environmental effects analysis. The outcome of appeals and protests may include additional analysis for effects and may influence the design of projects. Litigation on NEPA decisions may also challenge the adequacy of analysis. Litigation may also ultimately result in design changes for proposed actions.

Project Section 7 Endangered Species Act Consultation

Federal agencies are required to comply with Section 7 of the Endangered Species Act (ESA). ESA consultation takes place when there are proposed or listed species or designated/proposed critical habitat present. The action agencies consult with the Fish and Wildlife Service (FWS) or the National Oceanic and Atmospheric Administration Fisheries (NOAAF), depending upon the fish species.

The action agencies have manual requirements and follow the implementation regulations (Code of Federal Regulations) in preparing Biological Assessments (BAs). The BAs also conform to analytical process formats developed by the FWS and NOAAF. The current formats evaluate effects to listed species or critical habitat at a variety of scales, from site to watershed, by habitat indicators. The determination of effects is dependent upon specific site and watershed physical and biological baseline conditions for a proposed action and the design and anticipated effects of the action itself. The four agencies (FWS, NOAAF, BLM and FS) have developed a draft analytical procedure for Section 7 ESA consultation on listed fish species and critical habitat that is currently being evaluated on several test projects. It assesses for impacts at multiple scales, from site to watershed. Key features of the draft process are:

- 1) More closely integrates the use of Watershed Analysis (WA) results, the NEPA analysis and the ESA consultation process;
- 2) Specific identification and documentation of the effect by what part of the proposed action is causing it, what life history stage of the fish is being affected, and eight factors of the effect (nature, proximity, timing, duration, probability, frequency, distribution, and magnitude);
- 3) Tracking effects on the landscape of previous federal actions and current proposed actions to determine aggregated effects, at the scale of watersheds

The four agencies conduct ESA consultation using the "Streamlined Consultation Procedures for Section 7 of the Endangered Species Act" (USDA et al. 1999) which is an interagency agreement. It established a hierarchy of teams from project-level consultation teams, known as Level 1 teams, to higher level teams for elevations of disputes. The Level 1 teams evaluate BAs and effect determinations. If formal consultation is required, the teams discuss what will be presented in Biological Opinions for terms and conditions. The terms and conditions are mandatory requirements for the action agencies to follow. The regulatory agencies are encouraged to participate in early phases of project development. This can result in design changes to projects.

A potential outcome of ESA consultation is a "Jeopardy" determination and/or a finding of "Adverse Modification" of critical habitat. These are rare because the streamlining process and the requirements of the action agencies to follow multiple laws, policies, standards and guidelines in the Plans, respond to public comments, resolve protests/appeals during the NEPA process, and resolve litigation, generally do not result in projects with such impacts moving forward to ESA consultation. Jeopardy or Adverse Modification finding would result in deferral or modification of project designs.

Project "Design Criteria" are also a feature of some ESA consultations. Action agencies identify design "sideboards" in discussions with their Level 1 team regulatory agency counterparts to minimize adverse effects of actions to listed fish or critical habitat. Design criteria are often developed for programmatic consultations, where entire programs of work such as road maintenance or habitat restoration are consulted on as a whole.

Project Magnuson/Stevens Act consultation

Amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) in 1996 required the identification of all habitats essential to federally-managed fishery species and implementation of measures to conserve and enhance this habitat. The amendments also required federal agencies to consult with NMFS on activities that may adversely affect Essential Fish Habitat (EFH) of federally-managed commercial fishery species. This requirement became effective on September 27, 2000 when Amendment 14 to the Pacific Coast Fishery Management Plan for Chinook salmon, coho salmon and Puget Sound pink salmon was developed. Appendix A of that plan defines EFH and displays the geographic extent of it for the salmon species.

The definition of EFH is: A...those waters and substrate necessary to fish for spawning, breeding, or growth to maturity. Any project that adversely affects such waters and substrate has an EFH consultation requirement. Therefore, the scope of projects requiring EFH consultations may include those located up slope from stream channels and associated riparian areas. Consultations for EFH salmon species are typically included within Biological Assessments for ESA-listed salmon species and are assessed at site and reach scales. Where there are no ESA-listed salmon species but where there is EFH, the analysis is completed in conjunction with the NEPA analysis.

Analysis to Obtain Permits

Actions requiring permits also require additional analysis and reviews. The analysis provided in the application process for a permit, such as a removal and fill permit for stream channel work, is usually provided by NEPA analysis. External reviews take place by the permit agencies (Army Corps of Engineers, State Lands) prior to issuing permits for the action. Some actions require conformance with State standards, such as fish passage projects. These reviews and analyses are typically for site or reach-scale effects and may result in design changes.

Monitoring and Inventory

Monitoring provides information that influences the design of actions and their effects. Local administrative unit monitoring is variable and responds to LRMP/RMP monitoring questions and specific monitoring requirements of NEPA decisions for projects. Water quality monitoring, pre and post project habitat evaluations, and fish population monitoring such as juvenile fish estimates and spawning surveys over multiple years take place. Northwest Forest Plan (NWFP) implementation monitoring spans the entire NWFP area. A sub-sample of projects is evaluated each year for compliance with Standards and Guidelines and annual reports are prepared. Stream inventories provide information on long-term and project-specific environmental conditions.

The Aquatic and Riparian Effectiveness Monitoring Program (AREMP) is a statistically-based sampling of sixth-field HUC watersheds on an annual basis across the NWFP area. Sites are monitored for physical and biological characteristics. The data is then placed into a model to determine an overall watershed score. The score is placed on a scale from -1 to 1 where a 1 indicates that it is true that the watershed is in good condition. The hypothesis is that if the NWFP and its ACS is effective at restoring habitat and processes that support it over time, the frequency distribution of watersheds will move towards "true" for good condition. Because of the nature of response time at watershed scales to land management activities, and sample size, conclusions about the effectiveness of the NWFP at the scale of the entire NWFP area may not be available for 10 or more years.

Other effectiveness monitoring is in the form of scientific studies. Many studies are funded by the action agencies to evaluate effects of types of land management activities, such as logging and road-building on flow and sediment regimes and the effectiveness of different types of aquatic habitat restoration techniques.

These forms of monitoring and inventory influence the design of projects and also contribute towards an understanding of effects of management actions at various scales.

Summary and Conclusions

The analysis of effects of actions at various scales occurs through a number of different, interrelated, and often integrated, processes. These include NEPA, ESA Section 7 consultation, and EFH consultation. The draft analytical procedures for ESA

consultation integrate the WA aspect of the Aquatic Conservation Strategy with NEPA and project level ESA consultation. This will result in a thorough understanding of environmental impacts and ESA effects at scales ranging from site to watersheds.

The design of projects has been and will continue to be driven by the goals of the NWFP and shaped by land allocations, S&Gs, context provided by relevant information from WA, NEPA analysis (including public participation), mitigations including site-specific Best Management Practices, and the results of the streamlining consultation process during ESA consultation. Projects requiring permits undergo additional analysis and review by other federal and state agencies that may result in design changes. Decision makers will continue to document that projects are consistent with LRMPS/RMPs and therefore the ACS of the NWFP that is integrated in them. Project implementation will continue to be in accordance with NEPA decisions and, where formal ESA consultation is required, with the terms and conditions of BOs.

Monitoring and project administration will continue to evaluate whether or not projects were implemented as designed, in accordance with S&Gs, BMPs, and with contract specifications, and whether or not they are effective in meeting project goals. AREMP will ultimately provide a picture of whether or not the ACS is effective across the NWFP. In the short-term, project level monitoring, research results, and annual implementation monitoring will provide information on the impacts and conformance with "rules" of federal land management agency projects. This information will be used for future project design and administration to minimize adverse environmental impacts and ESA effects.

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APPENDIX E

POTENTIAL CHANGED CONDITIONS REPORT



Potential Changed Conditions

The BLM and FS considered whether large wildland fires, floods, drought, or other unusual weather patterns occurring since 1994 changed the Affected Environment described in FEMAT or the Northwest Forest Plan Final SEIS. These natural episodic disturbance events are an integral part of process-based management contained in the Aquatic Conservation Strategy. As stated in the FEMAT report (page V-29) and the Northwest Forest Plan FSEIS (page B-81):

“The heart of the approach is the recognition that fish and aquatic organisms evolved within a dynamic environment.”

Wildland and Prescribed Fire

Over the Northwest Forest Plan area, wildfire has been the most frequent and widespread, coarse-scale disturbance event. Fire return intervals are highly variable throughout the area and range from as much as 400 - 500 years in the Mount Rainier National Park to as little as every three to four years in dry, eastside pine areas of northern California. Wildfires can also cover as little area as a lightning struck tree and as much as 250,000 acres, and rarely as large as the 2002 Biscuit Fire, which covered half a million acres.

Wildfire has always played a role in forming the landscapes of the Northwest. Many species are dependent upon fire for habitat formation, regeneration processes and forage production. However, well-intentioned suppression activities over the last 80 to 100 years have altered stand structures and composition in low-elevation forests. That alteration has shifted the fire frequency and intensity patterns of both eastside and westside forests. Overall, more fires are larger, more intense, and more difficult to control. About 1 percent of all wildfires in the west are responsible for about 98 percent of all areas burned (Straus and others, 1989). [Insert data, citation] Fire suppression is believed to have stretched the fire return interval in areas that historically averaged a fire every seven years to one every forty years (Lehmkuhl, cite). Fewer low-intensity fires cover large areas – they are easier to control and more likely to extinguish on their own. Suppression strategies for the more intense fires are both dangerous and expensive. The FEMAT report (p. III-35) states:

“... large-scale disturbances are natural events, such as fire, that can eliminate owl habitat on hundreds of acres. Certain risk management activities, if properly planned and implemented, may reduce the probability of these major stand-replacing events. There is considerable risk of such events in Late-Successional Forest Reserves in the eastern Oregon Cascades, eastern Washington Cascades, and California Cascades provinces and a lesser risk in the Oregon Klamath and California Klamath provinces. Elevated risk levels are attributed to changes in the characteristics and distribution of the mixed conifer forests resulting from past fire protection.”

The changing patterns in fire behavior have been known for some time. The 1988 Yellowstone National Park fires served to bring the issue into sharp focus. Although paleo-ecological records indicated that fires of this magnitude had occurred in the area over the last, much of the public, many land managers and decision-makers seemed relatively unaware of the probabilities of fires of this magnitude. These large-scale events (over 5,000 square kilometers) occurred very infrequently and had a periodicity far longer than the average person's lifetime. Although the extreme wildfire events of the 2000 and 2002 fire season have left us with strong reminders of the shifts in our landscape, the possibility was well known during the development of the FEMAT analysis and FSEIS effects analysis of the Northwest Forest Plan. The FEMAT report cites literature by Jerry Franklin and Tom Spies from 1984 that estimates similar fire frequencies and behaviors. One of the primary limitations in the FEMAT analysis of the probabilities of developing late-successional and old growth conditions was fire behavior. FEMAT states (pp IV-72) that:

“The probabilities of large-scale disturbances and other environmental changes during the next 100 years are high. The region has historically been subjected to large fires ...”

Prescribed fire has been adopted as a mechanism of simulating the less intense fires that were more extensive and frequent in the past. Prescribed fires generally leave more naturally patchy burn areas with much greater overstory retention. They help eliminate ground fuels to reduce the risks and hazards of allowing natural wildfires to run their course.

As mentioned elsewhere in references to the development of the ACS, the framers of the Northwest Forest Plan focused on disturbance ecology as a central organizing principle. They were well aware of the role that disturbances play in forming our landscapes, creating wildlife habitat, and affecting the distribution

and abundance of organisms. They also showed a profound understanding of the relevance of scale to developing and maintaining a long-term conservation and sustainable production strategy.

The Northwest Plan framers translated that understanding into eleven terrestrial objectives and nine Aquatic Conservation Strategy objectives. Terrestrial objective nine addressed the concern with managing large-scale disturbances such as wildfire:

"To reduce risk to late-successional ecosystems resulting from large-scale disturbances and unacceptable loss of habitat due to large-scale fire, insects, and disease and major human impacts."

Terrestrial objective 7 also refers to natural processes that would include fire:

"To maintain ecological processes, including those natural changes that are essential for the development and maintenance of late-successional and old-growth ecosystems."

Many of the plan objectives apply to larger-scale features. These features may only be monitored at larger scales than that of the 26 individual planning units that are under the Forest Plan. Large-scale fire events are one good example of the type of event intended to be monitored and managed at the larger, regional scale.

Through combinations of dendrochronology, sediment charcoal and pollen and fossil records, we have a large-scale record of fire history over thousands of years. Looking at ten sampling areas throughout the Pacific Northwest, Dr. Fred Swanson at the Pacific Southwest Research Station in Corvallis has established that the 1500s and the 1800's were both considered periods of intensive fire. The 1600's, 1700s and 1900s were centuries that experienced relatively less wildfire in the area. He also believes that major fire events occurred both 450 years ago and 125 years ago. Because of the long periodicity of wildfire events and cycles, the eight years that have passed since the signing of the Forest Plan are insufficient to evaluate whether or not we are outside the scope of the effects analysis of the FSEIS. Although the fire years of 2000 and 2002 were costly, catastrophic and dramatic, they are insufficient to establish a fire regime substantially different than that of eight years ago as analyzed under the Northwest Forest Plan. Fires since 1994 do not change the planning assumptions or effects analysis presented

in the Northwest Forest Plan and associated reports, particularly those assumptions relevant to this SEIS.

Floods

Flooding is recognized as part of a natural landscape disturbance regime. Floods transport and redistribute wood and sediment unevenly throughout the channel network (FEMAT, V-13). The terms "peak flow" and "flood" are often used interchangeably; public perception tending to associate the term "floods" with rare catastrophic events.

Floods are important disturbances that provide for the formation of complex habitats as material is transported through the stream network during high flows. The formation of complex habitat is dependant on a full range of flow and processes like landslides to provide sediment and wood for transport. Benda (1998) and others have demonstrated that peak flows (winter floods) that occur approximately one out of three years can move landslide-derived sediment downstream. Floods large enough to transport wood may occur frequently, but transport of wood depends on the wood supply and topography (Nakamura and Swanson, 1993).

Flood frequency and magnitude is variable over time and large catastrophic floods can happen during any year. The actual number of years between floods of any given size varies as climate varies. The term "100 year flood" can lead people to believe that a large flood can happen only once every 100 years. Actually the term is really a statistical designation, meaning there is a "1-in-100 chance" that a flood this size will happen during any year (USGS, 1996). Probability estimates improve each year that records are kept.

Numerous major floods have occurred across the Northwest Forest Plan area since 1994. Four major storm events were considered "100-year floods" in 1995 and 1996. More than one "100-year flood" occurred in the same sub-basins in successive or nearly successive years (USGS 1998).

None of the major floods occurring since 1994 were caused by dam failure or other human activity. Floods in the area often occur during an El Nino weather pattern, which are associated with warm and wet conditions. During these periods the area can be subject to intense flows of constant moisture from the

Hawaiian Island chain that is known as the "pineapple connection." These set the stage for many floods including those that have occurred since 1994.

The agencies stepped up restoration activities in response to major floods in 1996 and 1997. Project accomplishments included:

- 3500 miles of stabilized roads,
- 60 miles of relocated roads,
- 900 miles of decommissioned roads
- over 200 upgraded road/stream crossings

Source: USDA, Recovery Report, Floods of 1996-1997.

Major floods were discussed in the Northwest Forest Plan FSEIS and FEMAT. The Proposed Action does not change the requirement to consider the role of peak flows and flooding in forming aquatic habitat nor the appropriate responses in the event of a flood. In both alternatives, the Watershed Analysis would need to consider the effects of floods at the watershed and larger scales in terms of restoration needs and adaptive management. Future restoration projects would need to comply with standards and guidelines and where appropriate, adapt new methods learned from these recent episodic events.

Drought

Drought is a normal, recurrent feature of climate and can be considered a natural "disturbance" even in humid areas. The frequency of droughts in the northwest depends on variable climatic conditions that appear to follow El Nino trends, especially north of Roseburg, Oregon (Taylor, 1988).

Drought is typical within the Northwest Forest Plan area, however the frequency, severity and duration of droughts in the Northwest Forest Plan area have varied dramatically over the last hundred years. NOAA records show that some part of the Pacific Northwest experiences a drought in 75 out of a 100-year period.

Just as with floods and wildland fires, FEMAT acknowledged droughts as natural catastrophes, which would occur periodically over long time periods (FEMAT V-I)

El Nino

El Nino events have been recorded seven times since 1940, including 1997-98. There is nearly 100 percent probability that moderate El Nino conditions will continue for the first quarter of 2003 (NOAA International Research Institute For Climate Prediction) and Pacific salmon and steelhead will continue be impacted by ocean conditions generated by broad scale weather patterns.

Anomalous warm sea surface temperatures and changes in costal currents and upwelling characterize El Nino ocean conditions. Principal ecosystem alterations include deceased food base productivity and changes in prey and predator species distribution. Increased mortalities and reduced growth have been noted in Pacific salmon populations off Oregon and Washington after previous El Nino events (NOAA 2000).

The ACS does not address ocean conditions affected by El Nino events, but rather, strives to maintain and restore freshwater habitats. Large weather patterns and ocean conditions are not affected by the Proposed Action and are therefore not relevant to the decision to be made.

Relationship Between Wildfires, Floods, Droughts and El Nino (Potential Changed Conditions) to the Decision to be Made

The events occurring since 1994 are not considered changed conditions that would invalidate the four components of the Aquatic Conservation Strategy (watershed analysis, watershed restoration, Key Watersheds, Riparian Reserves). The Northwest Forest Plan and Aquatic Conservation Strategy require consideration of natural disturbances in land management decisions. The events occurring since 1994 will be factored into the planning process at all scales as appropriate. The Proposed Action would not change the way the agencies respond to these events.

The Northwest Forest Plan provided an adaptive management approach to environmental conditions and events. The Northwest Forest Plan recognized that ecosystems are not static but are ever changing in response to conditions and events.

APPENDIX F

REVIEW OF SCIENTIFIC INFORMATION



REVIEW OF SCIENTIFIC INFORMATION

By GORDON REEVES, Ph.D.

March 20, 2003

The Aquatic Conservation Strategy (ACS) of the Northwest Forest Plan is designed to restore and maintain the process that create and maintain conditions in aquatic ecosystems over time across the area inhabited by the northern spotted owl (*Strix occidentalis caurina*). The ACS is a region-wide strategy designed to restore and protect the ecological processes and landforms that contribute habitat elements to streams and to promote the favorable ecological conditions for fish and other aquatic and riparian-dependent organisms (FEMAT 1993). The ACS was based on the best science available at the time.

Much scientific literature on aquatic ecosystems, on the impact of human activities on them, and on conservation strategies for fish and other aquatic and riparian organisms has been produced since FEMAT in 1993. This document summarizes key science findings on the topics of: (1) ecosystem and landscape dynamics and the range of natural variation (RNV); and (2) the ecological role of headwater streams. These are key topics that relate to ACS components and they are particularly relevant to the changes proposed by the Draft Supplemental Environmental Impact Statement. This document synthesizes some of the key peer-reviewed literature on these topics. However, it does not summarize or review all of the scientific literature about the topics listed previously or about other components of the ACS. Documents that provide excellent reviews and synthesis on these and other relevant topics include Spence et al. (1996), National Research Council (1996), Naiman and Bilby (1998), Gresswell (1999) and Everest and Reeves (in review).

Spatial and Temporal Scales and Disturbance

General Review

Prior to the development of the ACS, much of the focus for fish was on relatively small spatial scales, such as habitat units (Bisson et al. 1982, Nickelson et al. 1992) and reaches (Murphy and Koski 1989). Williams et al. (1989) found that no fish species listed under that Endangered Species Act was ever recovered after listing. They attributed this to the general failure of recovery efforts to focus on habitat attributes rather than on the restoration and conservation of ecosystems.

The ACS is focused at the ecosystem and landscape levels and developed for application over broad geographic areas. This was necessary to aid in the recovery of freshwater habitats of listed and declining populations of anadromous salmon and trout (*Oncorhynchus* spp.) and other fish within the range of the northern spotted owl. Since the ROD, a variety of sources, including interested publics, interest groups, scientific review and evaluation groups (e.g., National Research Council 1996, Independent Multidisciplinary Scientific Team 1999), regulatory agencies, and policy- and decision-

makers have called for the development of policies and practices to manage the freshwater habitats of at-risk fish at ecosystem and landscape levels.

Our understanding of what constitutes the aquatic ecosystem and the landscape they occupy, particularly with regards to anadromous salmon and trout that are the major focus of ACS, has evolved since the ROD. Ecosystems and landscapes are different entities and therefore, have different management requirements. Ecosystems are vague entities with boundaries that may shift with space and time. Reeves et al. (2002) and Reeves et al. (in press-a) considered the watershed, which was defined as subbasins of 20-200 square miles by FEMAT (1993), to be the boundaries of an aquatic ecosystem. This delineation is consistent with the size criteria and definition of ecosystems of Hunter (1996). A landscape is a mosaic or collection of ecosystems (Hunter 1996) that occupy a relatively large area (2.47×10^5 to 2.47×10^7 acres (Concannon et al. 1999)). From an aquatic perspective, multiple watersheds that are contiguous are considered a landscape (Reeves et al. 2002, Reeves et al. in press-a).

Major paradigms of ecosystem management include (Lugo et al. 1999):

- (1) Ecosystems are not steady state but are constantly changing through time.
- (2) Ecosystems should be managed from the perspective of resilience, as opposed to stability.
- (3) Disturbance is an integral part of any ecosystem and is required to maintain ecosystems.

Ecologists (Holling 1973, White and Pickett 1985) and managers recognize the dynamic nature of terrestrial ecosystems and how the associated biota and physical characteristics change through time. They are also aware that range of conditions that an ecosystem experiences is determined to a large extent by the disturbance it encounters (e.g., wildfire, hurricane, timber harvest and associated activities, etc.). Natural disturbances can: (1) increase biological diversity; (2) be crucial for the persistence of some organisms and the habitat that support them; and (3) express and maintain key ecological processes (Turner et al. 1994).

Resilience is the ability of an ecosystem to recover to pre-disturbance conditions following a disturbance (Lugo et al. 1999). An ecosystem demonstrates resilience after a disturbance when the environmental changes caused by the disturbance are within the range of range of conditions that that the system experienced before disturbance (See discussion of range of natural variability that follows). Reduced resilience may include extirpation of some species, increases in species favored by available habitats (Levin 1974, Harrison and Quinn 1989, Hansen and Urban 1992).

The less management actions resemble the natural disturbance regime under which an ecosystem evolved, the less resilient an ecosystem will be. Thus, the obvious challenge for ecosystem management is to make management actions resemble the natural disturbance regime as closely as possible (Lindenmayer and Franklin 2002). Factors that should be considered in developing ecosystem management plans and policies include frequency, magnitude (White and Pickett 1985, Hobbs and Huenneke 1992) and legacy

(i.e., the conditions and materials that exist immediately following the disturbance) (Reeves et al. 1995, Lindenmayer and Franklin 2002) of disturbance regimes in managed ecosystems. The impact on the ecosystem will depend on how closely the management disturbance regime resembles the natural disturbance regime with regard to these factors. Everest and Reeves (in review) reported that they found no evidence in the peer-reviewed literature where fish populations or habitat responded positively to or remained unchanged as a result of the impacts from intensive land management activities.

Landscape management strives to maintain a variety of ecological states in some desired spatial and temporal distribution. To do this, landscape management must consider: (1) the development of a variety of conditions or states in individual ecosystems with the landscape at any point in time; and (2) the pattern resulting from the range of ecological conditions that are present (Gosz et al. 1999). Management should address the dynamics of individual ecosystems, the external factors that influence the ecosystems that compromise the landscape, and the dynamics of the aggregate of ecosystems (Concannon et al. 1999).

To establish a dynamic perspective of ecosystems and landscapes, the range of natural variability (RNV) must be recognized. RNV is the range of conditions that a spatial level of organization experiences naturally over an extended time period, several decades to centuries. It is often used for individual components of an ecosystem, such as number of pieces of large wood or number of pools, or for ecological states. The usual manner for establishing the RNV for a parameter is to measure the parameter in pristine systems (i.e., systems having little or no history of impact from human activities). The RNV is represented by the range of these values. This is well established for terrestrial systems (i.e., early-, mid-, and late-successional) (e.g., Wimberly et al. 2000) but not nearly well or widely recognized for aquatic ecosystems.

Spatial scale is an important, but not well recognized, element of RNV. The RNV is inversely related to spatial scale (Wimberly et al. 2000). The smaller the spatial scale, the larger the RNV and, conversely, the larger the scale the smaller the RNV. Hierarchy theory provides the rationale for this relation and is an appropriate framework for considering ecosystem issues at and between different spatial scales (Overton 1977). Each level within the hierarchy of an ecosystem has unique properties and behaviors that are expressed over time. The properties of lower levels of organization are "averaged, filtered, and smoothed" as they are aggregated at higher levels of organization (O'Neill et al. 1986). Consequently, the range and variability in the properties and conditions of the system are relatively wide at lower levels of organization compared to higher levels (Wimberly et al. 2000). A recent paper on the concept of RNV (Landres et al. 1999) and another estimating RNVs (Keane et al. 2002) did not consider the effect of spatial scales stimulations.

Wimberly et al. (2000) illustrated the RNV of successional vegetative stages in the Oregon Coast Range at the various spatial scales. They estimated (based on a model of fire frequency and intensity and vegetation response over 3000 years) that at the scale of a late successional reserve (100,000 acres) the range in the amount of old growth was

from 0 to 100%. For an area roughly the size of a national forest (750,000 acres), the RNV for old growth was from approximately 10 to 75%. The RNV for the Coast Range (5,600,000 acres) was 30-55%.

The following example can be used to further explain the reason for the relation between RNV and spatial scale. Assume that a person is suspended in a balloon above a given area in the Oregon Coast Range for several decades to centuries and is able to observe the changes in the age of trees, similar to what Wimberly et al. (2000) did with their model. There is a very high likelihood that the sites will be disturbed at some point in time by wildfire, a windstorm, or other infrequent disturbance event. Immediately following the event there will be no older trees; they will have been killed by the event. Assuming that the next large disturbance event will not occur for some time, new trees will grow and eventually the entire area will be covered with old trees. The RNV is 0 to 100% for at this scale.

A different pattern would be observed if the balloon was suspended at a higher altitude and a larger area was observed. The large, infrequent disturbance events generally affect relatively small portions of the landscape at any one time. Thus, it is very unlikely that the entire area being observed would be affected by a disturbance event at the same time. The asynchronous nature of the disturbance events results in a series of patches of vegetation of different ages. This narrows the RNV because of the reduced likelihood of finding the extreme condition of the entire area either had no old growth or all of it was old growth at any point in time. The RNV is further reduced at larger spatial scales because disturbance events are even more desynchronized.

Dynamics and Aquatic Ecosystems

The perspective that aquatic systems are dynamic, particularly at the ecosystem and landscape scale, was not widely recognized at the time that the ACS was developed. Prior to the development of the ACS, there was recognition that biotic (Resh et al. 1988) and physical (Swanson et al. 1988) components of aquatic systems, particularly at the smaller spatial scales, were influenced by relatively frequent events, such as floods. One reason for the absence of the recognition of dynamics of aquatic ecosystems is that the major paradigms that shape our thinking about aquatic systems, such as the River Continuum Concept (Vannote et al. 1980), do not consider time or its influence. Similarly, classification schemes such as that of Rosgen (1994) identify a single set of conditions for a given stream or reach type; no consideration is given as to how these conditions may vary over time. The physical and biological relations were assumed to be fixed in time and to be unchanging. Frissell et al. (1986) describe the hierarchical organization nature and identify a temporal component associated with each level; the finer the scale, the shorter the response period. However, they did not consider how features of a given level in the hierarchy respond over time. A more recent examination of the hierarchical organization of streams by Fausch et al. (2002) also recognized that time is a critical factor to consider when examining aquatic ecosystems. However, they did not integrate it into their description of stream systems. Failure to incorporate time into consideration of aquatic systems, especially at higher levels of organization, has led

to an implied expectation that stream ecosystems experience a limited, if not single, set of conditions and that this condition (or conditions) is relatively stable through time.

The foundation for the focus on ecological processes and dynamics of the ACS came from Naiman et al. (1992). They hypothesized that different parts of a watershed (i.e., headwaters, middle portion, lower portion) had different disturbance regimes, based on frequency and magnitude of disturbance. They also believed that the landscape would have watersheds with range of conditions because of the asynchronous nature of large and infrequent disturbance events, such as wildfire and flooding. Since then a number of studies examined the dynamics of aquatic ecosystems in space and time since the ACS. Reeves et al. (1995) described the range of conditions of watershed in the Tyee sandstones of the central Oregon coast in response to wildfire. They found a range of conditions from less productive to more productive. May (2001) did this for headwater streams in the same region and found a wide variation in conditions within a channel and between channels. Channels that had not been disturbed for several decades were filled with gravel and wood. Recently disturbed channels were devoid of sediment and wood and were scoured to bedrock. Benda and Dunne (1997a,b) and Benda et al. (1998) described a similar distribution of in-channel sediment conditions in watersheds over time. Benda et al. (in press-a) examined the impact of landslides following wildfires on aquatic ecosystems in the Boise River, Idaho. The landslides had significant impacts on the channel, creating complex channels and delivering large amounts of wood to the channel. These conditions are expected to vary widely over time.

The following from Reeves et al. (1995) is a synopsis of the long-term response of aquatic ecosystems to disturbances and an illustration of the concept of the RNV at the watershed scale. Reeves et al. (1995) examined three watersheds in the central Oregon Coast Range that were at different points of time from the last major wildfire and catastrophic hillslope failure. The most recently disturbed watershed (80-100 years since the last major fire and hillslope failure) and the one that had not been disturbed for an extended time (300 years) had the simplest, and least favorable fish, habitat. However, the specific habitat attributes varied between these watersheds. The most recently disturbed watershed had large amount of gravel and a relatively low abundance of large wood. The system that was the furthest from disturbance had just the opposite, little to no gravel and an abundance of large wood. The watershed that was intermediate in time from disturbance (160-180 years) had intermediate levels of gravel and wood and the most favorable conditions for fish. The numbers and diversity of juvenile salmon and trout was greater in this watershed than in the others.

Recent studies examined how that aquatic ecosystems at the site and reach scale respond to landslides and/or floods. Hogan et al. (1998) examined the impacts of landslides from timber harvest activities on streams in the Queen Charlotte Islands, British Columbia. In-channel features changed immediately following the landslide. Upstream of a deposit, pools were lost and smaller sediments accumulated in riffles. Downstream the channel gradient steepened and the amount of gravel declined. Over time, 10-50 years depending on site-specific features and conditions, more complex and diverse conditions for fish developed.

Studies in the Appalachian Mountains of Virginia examined the impacts of floods and landslides. Dolloff et al. (1994) examined changes in biological and habitat conditions in a small stream following flooding associated with Hurricane Hugo. There was no change in the total area of riffles and pools but the total number of habitat units declined and their mean depth decreased. The amount of large wood in the channel doubled. No fish species were lost from the system but the numeric response varied. Some species increased in abundance and others declined.

In Shenandoah National Park, physical and biological features of a stream that experienced flooding and a debris flow varied over five years of study (Roghair et al. 2002). Immediately following the debris flow and flood, the number of pools and riffles and substrate size increased and pool and riffle surface area decreased. Five years later, the total number of pools was at level found before the flood and debris flows and substrate size decreased. The density of brook trout (*Salvelinus fontinalis*) four years after the flood and debris flow exceeded the pre-event level. It declined to pre-event levels in the fifth year.

Several factors influenced the responses of the studies that were just discussed. The physical legacy of the disturbances was important. Wood and sediment are the basic building blocks of fish habitat. These materials were introduced into the streams and allowed for the development of conditions favorable to fish over time. The presence of refugia is an important determinant of how fish respond to disturbances (Sedell et al. 1990). A refugia can be an area that afforded protection to individuals during the disturbance event and is the affected area or it could be a nearby area that was not affected. Refugia provide sources of individual to re-establish populations in affected areas. Additionally, the life history (Dolloff et al. 1994) and habitat requirements (Reeves et al. 1993, Reeves et al. 2002) can influence the immediate and longer-term response of a species to disturbance events.

Implications

Focusing policies for and management of aquatic ecosystems at the landscape scale presents challenges to policy makers, managers, and regulators (Reeves et al. 2002). One major task is to understand how the condition of aquatic ecosystems varies through time at all spatial scales and the ecological, social, and economic implications of this variation. Currently, the natural range of the condition of aquatic ecosystems is assumed to be small and to generally be good with regards to habitat. This condition is expected to be relatively constant through time and to be present on all systems at the same time. Assuming that this expectation can simply be applied to higher spatial levels is at least partially responsible for the current misunderstanding about the ACS. Focusing on the landscape requires an understanding that conditions in aquatic systems vary over time at each spatial scale. It also requires that appropriate goals and objectives be established for the landscape. In the case of aquatic ecosystems and watershed, this will require identifying what is the appropriate fraction of the watershed that should be in "good" condition at any point in time. Also, it requires the articulation of policies that recognize

the dynamic nature of aquatic ecosystems and describe practices that allow the systems to express a range of desired conditions over time.

The dynamic view of aquatic ecosystems and landscapes described in the previous paragraph is not uniformly held or recognized in the scientific community. Montgomery et al. (2003) questioned the role that dynamics plays in unmanaged situations. They contend that the role of disturbances such as debris flows in old-growth forests is limited. They believed that models of disturbance ecology for salmonids, such as that presented by Reeves et al. (1995), need to recognize differences in the disturbance dynamics of old growth and industrial forests. This is necessary to “provide credible avenues for determining risk associated with land management in steep forested terrain” (Montgomery et al. 2003 p. 87). They felt that “management recommendations based on evolutionary interpretations that are themselves based on a disturbance model primarily applicable to industrial forests may prove misleading” (Montgomery et al. 2003 p. 87).

It is imperative that the spatial scale be specified when RNV and cumulative effects are discussed or evaluated. At small scales the RNV is very large. Consequently, it could be argued that there would be no cumulative effects resulting from management actions, except from the most extreme impacts. Most assessments of the impacts of human activities are made at relatively small scales. Failure to recognize the relation between space and RNV undoubtedly contributed to the current confusion about the ACS and the scales at which it is applied and how compliance is measure.

Also, understanding the relation between different spatial scales is necessary to successfully assess the effects of management policies and activities aquatic ecosystems in the future. The failure to articulate or to recognize this relation contributes to the often intense and divisive debate about management policies and practices and impedes the development of viable options for managing aquatic ecosystems. Shifting the focus to landscape levels will require recognition of the principles about hierarchy theory and the relation among levels of organization if future management and assessment policies are to be successful.

Headwater streams

The establishment of Riparian Reserve was one of the cornerstones of the ACS. The Riparian Reserve network included fish-bearing streams, which had been the focus of management of aquatic ecosystems prior to FEMAT, as well as small, fishless headwater streams. The latter generally comprise the vast majority of the stream network (Gomi et al. 2002). Prior to the ACS these were not widely recognized as part of the aquatic ecosystem. Knowledge and recognition of the ecological importance of headwater streams has increased since the ACS was first articulated. They are sources of sediment (Benda and Cundy 1997a,b, Zimmerman and Church 2001) and wood (Reeves et al. in press-b) for fish bearing streams. They provide habitat for several species of native amphibians (Kelsey and West 1998) and macroinvertebrates (Meyer and Wallace 2001) (including recently discovered species (Dieterich and Anderson 2000)) and may be

important sources of food for fish (Wipfli and Gregovich 2002). Small streams are also storage and processing sites of nutrients and organic matter, which are important components of the energy base for organisms used by fish for food (Wallace et al. 1995, Webster et al. 1999, Kiffney et al. 2002, Wipfli and Gregovich 2002).

Headwater streams are among the most dynamic portions of the aquatic ecosystems (Naiman et al. 1992). Tributary junctions between headwater streams and larger channels are important nodes for regulating material flows in a watershed (Gomi et al. 2002) and are the locations where site level impacts from management activities are often observed. These locations have unique hydrologic, geomorphic, and biological attributes. The movement of sediment, wood, and other materials through these locations result in sites of high biodiversity (Minshall et al. 1985, Johnson et al. 1995). Habitat in these sites may also range from simple to complex depending on time from the disturbance (e.g., landslides and debris flows) and the types and amount of materials delivered to the channel.

Large wood is an important element of stream and river ecosystems. It forms and influences the size and frequency of habitat units for fish and other aquatic and riparian-dependent organisms (Bilby and Ward 1989, Wallace et al. 1995, Bilby and Bisson 1998). The size pieces and amount of wood in the channel also influences the abundance, biomass, and movement of fish (Murphy et al. 1985, Fausch and Northcote 1992, Harvey and Nakamoto 1998 Harvey et al. 1999, Roni and Quinn 2001).

Wood enters streams via chronic and episodic processes (Bisson et al. 1987). Chronic processes, such as tree mortality and bank undercutting (Grette 1985, Murphy and Koski 1989, Bilby and Bisson 1998), generally introduce single pieces or relatively small numbers of trees at frequent time intervals. Episodic processes usually add large amounts of wood to streams in large but infrequent events such as wind throw (Harmon et al. 1986), wildfire (Agee 1993), severe floods, and landslides and debris flows (Keller and Swanson 1979, May 2002, Reeves et al. in review).

Examinations of wood sources in streams (e.g., Murphy and Koski 1989, McDade et al. 1990, Robison and Beschta 1990) have focused on chronic input from immediately adjacent riparian zone. Such studies found that the vast majority of wood found in streams was derived from within a distance equal to the height of streamside trees. These and other studies (e.g., Van Sickle and Gregory 1990) either did not consider episodic sources of wood or found that they were only a small proportion of the total input (Murphy and Koski 1989).

In steep terrain, which is found on much of the area covered by the Northwest Forest Plan, landslides and debris flows are potentially important mechanisms for delivering sediment and wood from hillslopes and small headwater channels to valley-bottom streams. Reeves et al. (in press-b) found that an estimated 65% of the number of pieces and 46% of the total volume of wood in a pristine watershed in coastal Oregon came from outside the riparian zone immediately adjacent to the fish-bearing stream. Over 80% of the total number of pieces of wood in a western Washington (Benda et al. in

review) and northern California stream (Benda et al. in press-b) were from upslope sources. Other studies, such as May (2002) and Benda et al. (in press-a), found large amounts of wood from upslope sources in streams in the Oregon Coast Range and Idaho, respectively.

Pieces of large wood delivered from upslope areas are generally smaller than those originating from the riparian zones along fish-bearing streams. Reeves et al. (in review) found that the mean volume of a piece of large wood from upslope areas was one third the mean size of pieces from stream adjacent riparian areas in a coastal Oregon stream. Differences in mean size is likely attributable to fire history and other stand-resetting events. Hillslopes are more susceptible to fire and burn more frequently than streamside riparian zones (Agee 1993). Thus, trees in the streamside riparian zone may be disturbed less frequently and achieve larger sizes than upslope trees.

Geomorphic features of a watershed influence the potential contribution of upslope wood sources. Steeper, more highly dissected watersheds will likely have a greater proportion of wood coming from upslope sources than will watersheds with lower gradients. Murphy and Koski (1989) and Martin and Benda (2001) found that upslope sources of wood comprised a relatively small proportion of the wood in streams that they examined in Alaska. The watershed studied by Martin and Benda (2001) had a wide valley floor so wood was deposited along valley floors, away from the main channel. In contrast, Benda et al. (in press-a) found that wood delivered in landslides following wildfires was deposited in wide valley reaches in the Boise River, Idaho. In a central Oregon coast stream, Reeves et al. (in press) found that the amount of upslope-derived wood was greatest in reaches with narrow valley floors.

Even in watersheds where the potential contribution from upslope sources of wood is high, the ability of individual upslope sources of wood to fish-bearing streams can vary widely. Benda and Cundy (1990) identified the features of first and second order channels with the greatest potential to deliver materials to fish-bearing streams in the central Oregon coast. The primary features were gradients of 8-10% with tributary junction angles of $<45^\circ$. These features can be identified from Digital Elevation Models (DEMs) and topographic maps.

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